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PROCEEDINGS



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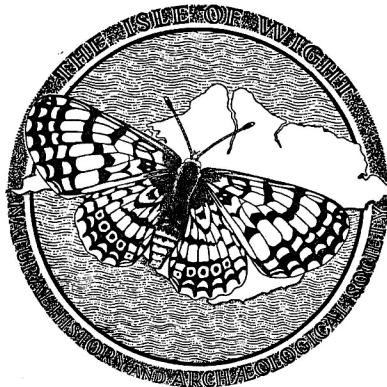
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VOLUME VII

PART I

PROCEEDINGS
OF THE
ISLE OF WIGHT
NATURAL HISTORY AND
ARCHÆOLOGICAL SOCIETY
1976



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(Publications sent in exchange, or enquiries re back numbers of Proceedings available, should be addressed to the Librarian, I.W. Natural History and Archaeological Society, c/o Agriculture House, 66 Carisbrooke Road, Newport, I.W.)

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Access to the Countryside

Mrs. C. Richardson, Westwood, 133 Castle Road, Newport, I.W.

Archaeology

Mr. L. R. Fennelly, 40 Old Road, East Cowes, I.W.

(Excavations Director)

Botany

Miss K. Page, 42 Carisbrooke Road, Newport, I.W.

Geology

Dr. A. Insole, Museum of I.W. Geology, County Library, Sandown, I.W.

Mammals, Reptiles and Amphibians

Mr. O. H. Frazer, Mottistone Mill, Brighstone, I.W.

Microscopy

Mr. D. Roberts, The Bee Farm, Lushington Hill, Wootton, I.W.

Ornithology

Lieut.-Cdr. J. M. Cheverton, 6 Westhill Drive, Shanklin, I.W.

Seashore

Mrs. I. Gaskin, Westholm, 5 Church Road, Binstead, I.W.

Borthwood Working Party

Mr. D. Cooper, Providence House, Norton Green, Freshwater, I.W.

EDITORIAL

With the issue of this number of the *Proceedings*, we are embarking on a new Volume, and the opportunity has been taken to make a number of important changes without departing too much from the traditional lay-out and content of former issues. One of the reasons for the delay in producing this issue has been concerned with the choice of page size that should be adopted. Although, in theory, one can have any size or shape that one chooses, in practice it is most economical to choose one of the standard international A sizes, since intermediate sizes involve much trimming and consequent waste of paper. It really came down to a choice of A5, which has been adopted, or A4, which is twice the area. There were strong arguments put forward, particularly by the archaeologists and geologists, for the adoption of the larger size, but it was finally decided that for most purposes A5 was the most appropriate size, comparable with the size of former issues, with the advantage of a slightly wider page. If, however, important papers are submitted, which require a larger format, arrangements will be made to have these printed as a Supplement to the *Proceedings*. It may well be, however, that such papers will be more appropriately published in one or other of the National Journals, and in such cases it is hoped that an Abstract will be made available for printing in the *Proceedings*, with full cross references, to ensure that all matter relating to the Island can be easily traced in the interests of scholarship.

It will be noted also that, in co-operation with the British Library and the Standard Book Numbering Agency Ltd., we have adopted the dual numbering of our publications, an International Standard Serial Number (ISSN), which remains the same for all issues of our *Proceedings*, and a different International Standard Book Number (ISBN) for each issue and also any off-prints we produce. This will ensure that our publications are well advertised and also that each publication is uniquely identified. We have also adopted the practice of identifying the *Proceedings* at the head of each main paper, which makes possible the production of off-prints without the heavy cost of over-printing.

It is hoped that with these innovations and the range of interesting papers on many topics, as demonstrated in this issue, we can look forward to a most exciting future.

O. H. FRAZER

NEW MEMBERS

(Elected to the Society during 1976)

MR. R. H. ADAMS, Mount Place, Wellow, Yarmouth.
MRS. E. LE BRECHT AND ROBERT, Willow Cottage, Blackbridge Road, Freshwater.
MISS P. R. BROOK, Westhill, Old Seaview Lane, Seaview.
MISS M. E. BROWN, The Beeches, Galley Lane, Brighthone.
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MRS. M. H. FAGG, Chelsfield, Galley Lane, Brighthone.
MRS. H. FENWICK, Ningwood Dairy Farm, Ningwood.
MISS V. FRY, Byfields, Station Road, Ningwood.
MR. G. GIBSON, 3 Worcester Road, Albany, Newport.
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MR. AND MRS. S. HEAD, 5 Berry Mead, Wroxall.
MRS. L. D. HEATH, Pucksfold, 1 Horestone Rise, Seaview.
MRS. S. P. HEYS, 22 Pound Mead, Haylands, Ryde.
MR. AND MRS. F. S. HODGSON, River Gleam, 187 Staplers Road, Newport.
MR. AND MRS. R. V. C. HOGG, Brook Villa, Brook.
DR. A. N. INSOLE, Museum of I.W. Geology, County Library, Sandown.
MRS. B. JAMES, 18 Beatrice Close, Binstead, Ryde.
MISS S. JEFFERIES, The White Lion, Arreton.
MRS. M. H. JEFFREY, Jackdaws, Church Road, Havenstreet.
MISS K. H. JOHNSON, Esengo, Madeira Lane, Colwell Bay, Freshwater.
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MR. A. KEAY, 13 Northumberland Road, Albany, Newport.
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MRS. P. MONTEITH, 8 Horestone Rise, Seaview.
MISS D. MAYBIN, Willow Cottage, Brook Lane, Chillerton.
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MRS. M. E. OGLANDER, Nunwell House, Brading.
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MRS. D. WHITEHEAD, 4 Heath Villas, Colwell Lane, Freshwater.
MR. AND MRS. P. WILKINSON, The Youth Hostel, Whitwell.
WEST WIGHT MIDDLE SCHOOL, Queens Road, Freshwater.

GENERAL MEETING, EXHIBITIONS, AND EXCURSIONS

General Meeting on 14th February, 1976.

At this very well attended meeting, held at the Teachers' Centre, Newport, members learned about "what the Sections are doing". Introducing the programme, the President said that it was a physical impossibility for any one member to attend all the events on the programme, and the purpose of this meeting was to keep members informed of what was going on at those meetings which they were unable to attend. That the sections were fully active was shown by the many and varied displays arranged around the room.

Mr. O. H. Frazer showed a series of slides taken at the Local Look Exhibition, which was important as a co-operative effort of all the sections.

Miss K. Page, the Botany Section Leader, announced that the revised Flora of the Isle of Wight was being prepared for publication. She paid tribute to the painstaking work of Mr. B. Shepard assisted by Mr. J. Bevis and Mr. R. Kettell, as well as other botanists, who had contributed to this important work. She then gave an illustrated review of the previous year's activities, and Mr. E. Burn showed how microphotography could help the botanist.

Mr. D. Roberts also drew attention to the use of the Society's microscope by other sections and had on view the imprint of a fossil insect recently discovered.

Mrs. C. Richardson, Access to the Countryside Leader, explained that by regular use of the network of rights of way members were able to gain access to the countryside and carry out surveys of natural history and archaeological interest. She was able to answer questions relating to the use of foot and bridle paths.

Mrs. R. Goodyer, Curator of the Brading Roman Villa, thanked members who were helping with the renovation of the exhibits at the Villa and referred to the work of the section leader, Mr. L. Fennelly, at the Combley Roman Villa. She looked forward to help with a week of pottery sorting to be undertaken after Easter.

After giving an account of highlights of the last year, Mr. N. Preece, the retiring leader, introduced Dr. A. Insole as the new Geology Section Leader and Curator of the Museum of I.W. Geology at Sandown. Dr. Insole spoke on the work of modernising the museum and gave details of some recent fossil discoveries, stressing the importance of reporting all finds to the museum.

Mr. O. H. Frazer, Leader of the Mammals, Reptiles and Amphibians Section, showed by means of films and slides most of these groups of animals to be found in or around the Island and gave details of the surveys to be carried out during the coming year by members of the section.

The Ornithology Section, led by Mr. J. Cheverton, met for walks each month and in addition took part in the National Wildfowl Count, the R.S.P.B. Beached Bird Survey, which acted as a monitor of marine pollution, the 1975 Rook Census, the Ornithological Site Register and was making plans to take part in the 1976 Nightingale Survey among other activities. Details of all these were displayed.

The President introduced Mrs. I. Gaskin as the Leader of the Seashore Section, which had been without a leader for some years, and now looked forward to a year full of activities.

Mrs. D. Frazer reported on the Forestry Commission wildlife census in which several section members had taken part.

The President thanked all the speakers and their sections for a most interesting and stimulating meeting.

General Meeting on 13th March, 1976.

“Great Aunt Mary’s Flower Paintings” was the subject of an illustrated talk and exhibition by Miss K. Page, held at the Teachers’ Centre, Newport. As an art teacher, Miss Page had researched the life of her great-aunt, Mrs. Mary Fraser, whom she had never known, and who had produced a great number of flower paintings from 1865 to her death in 1894 at the age of 79. The botanical accuracy and artistic skill displayed in these water colour drawings of British, Spanish and Alpine wild flowers made a most attractive display. The exhibition also included sketch books of views and a “family tree” of early photographic portraits of the typically large and industrious Victorian family to which the artist belonged.

General Meeting on 25th March, 1976.

Three organisations with a common interest in conservation met at the Teachers’ Centre, Newport. Members of the World Wildlife Fund, I.W. Supporters’ Group, the Hampshire & I.W. Naturalists’ Trust and the Society enjoyed an illustrated talk by Mr. Norman Davis, whose photographic skill is well known. The talk was in two parts and related to various aspects of conservation. Firstly, to bird observatories and field study centres on the mainland and islands with their facilities for observation, research and education; and secondly, to the problems of old buildings on the Island and a look at some of the rarer I.W. plants and animals. He spoke of his admiration for the work of conservation societies, but added that human beings also had problems and needed help.

The President thanked Mr. Davis for appearing at short notice in place of the scheduled speaker, Marion Brown, who was to have spoken on the Serengeti National Park, but was prevented from doing so by illness.

Visit to Grounds of Osborne House on 24th April, 1976.

Members met at Osborne and were taken on a guided tour of the grounds by the Superintendent, Mr. A. E. Fernley. Although there are many mature and exotic trees in the grounds, there are relatively few young ones to take their place, though each retiring House Governor upholds the pleasing custom of planting one, and recently pupils of Osborne Middle School have planted Beech and Scots Pine. The carriage drive, lined by four rows of trees, is being conserved by careful replanting over a long period to retain the aspect known to Queen Victoria. While admiring the rhododendrons and camellias, members had a good view of a red squirrel scampering across the lawn, and outside the walled garden a blackbird was seen sitting on her nest in a myrtle bush. The glasshouses, some ancient and of architectural merit and others more modern and functional, were filled with bedding plants for the summer display.

After a walk through the woods to the seashore, the party visited the Swiss Cottage area, where by sympathetic management of the grass, wild flowers, including orchids, were able to flourish under the light shade of the blossom trees.

The President thanked Mr. Fernley for sharing his knowledge of these famous grounds with such a large gathering of members, who had all enjoyed the visit.

Visit to the Botanic Garden, Ventnor, on 9th May, 1976.

A large number of members met at the Botanic Garden, Steepphill, Ventnor. The Superintendent, Mr. R. J. Dore, gave an outline of the recent history and problems involved in his task of maintaining the garden, and Dr. Laidlaw gave an account of the history of the area when he knew it as the Royal National Hospital, as recorded in his article in the *Proceedings*, Vol. VI, Part III, page 195.

The party were then conducted around the grounds and much admired the wide variety of flowering plants, many of which are extremely rare.

Visit to the Needles on 5th June, 1976.

Members met at Alum Bay for a visit to the newly acquired National Trust property at the Needles. Before proceeding to the site, the President explained with the use of maps how the Needles area deservedly enjoyed a special status in three ways; first, as an extension to the area of downland already owned by the National Trust, it was safe from unwelcome development in the future; secondly, although not at present included in the Site of Special Scientific Interest (S.S.S.I.) scheduled by the Nature Conservancy Order which covers the contiguous downland, because it was the property of the Ministry of Defence, steps were now being taken to have the area included; and thirdly, the cliffs here were part of a statutory bird sanctuary, extending from Hanover Point to Sconce Point.

The party were met by the resident National Trust Warden, Mr. J. B. Moorhouse, for a conducted tour of the area. Members were thrilled with the unrivalled views of the Needles and some were able to observe the nesting seabirds on the cliffs from somewhat precarious vantage points. At the request of the Warden help was given by some members in the identification of the many plants in the area, which was strikingly different from the downland close by, due to the lack of grazing in the past. Mention was made of the past history of the site from the building of the fort, which is one of a chain of Palmerston forts built in the last century for the protection of the Solent, to its more recent use as a rocket-testing site before its very recent acquisition by an anonymous donor for the National Trust.

The President thanked Mr. Moorhouse for a most enjoyable visit.

Excursion to St. Helens on 12th June, 1976.

This was a joint meeting with members of the Chichester West Sussex Natural History Society.

The party were met by the Rev. David Low and walked to the old St. Helens Church, where he gave an outline of its history. After a picnic lunch the party divided into three groups to study the flora under the guidance of Messrs. B. Shepard, J. Bevis and R. Kettell, and the President gave an account of the birds found in the area.

Excursion to Borthwood Copse on 3rd July, 1976.

Members met at the entrance to Borthwood Copse and were led by Mr. D. Cooper through the Society's Jubilee Plantation, where, under his guidance, considerable maintenance work had been carried out. The party then followed a circular route through the woods, which are always full of interest.

Exhibition Local Look at Brook from 1st to 31st August, 1976.

Many members took the opportunity of having a private view of the Exhibition in the morning of the first day, prior to its opening to the public in the afternoon. Mrs. K. Wadham, Chairman of the Local Look Sub-Committee, gave details of organisation for the benefit of those who would be doing stewarding duties, and Mr. O. H. Frazer spoke on the exhibits.

A report of this, the 16th Local Look Exhibition, appears later in these *Proceedings*.

Walk in the Carisbrooke Area on 4th September, 1976.

Members met at the car park in Carisbrooke Village for an archaeological walk in the countryside, led by Mr. W. Shepard, for the purposes of noting and interpreting the features of the countryside in relation to its past history.

Film Show at Ryde and Newport on 17th and 18th September, 1976.

A number of their latest films on bird life were shown by the Royal Society for the Protection of Birds in co-operation with the Society.

Fungus Foray and Exhibition on 23rd and 24th October, 1976.

The steady rain that fell through the morning provided a bleak prospect for the field meeting in the afternoon, but in the event the rain stopped and the sun shone briefly to greet some 50 members and friends, who gathered at Ashengrove, by kind permission of Mr. & Mrs. M. Ball.

After a brief introduction by the leader, Mr. O. H. Frazer, who showed a number of different specimens previously gathered to give an idea of the sorts of things to look for, the party divided into five groups and set off into different parts of the nearby woods to search for specimens, which were carefully arranged in the containers provided. After some two hours of intensive search, and, just as the rain was falling again, the specimens were brought back to the meeting place and transported to the Teachers' Centre, Newport, where they were joined by other specimens collected elsewhere in the Island by members not able to attend the field meeting.

Many of the specimens were laid on grey paper overnight to provide spore-prints to aid in the identification of the many species collected, which was carried out on Sunday morning by the leader with the able assistance of Messrs. Johnathan Knill-Jones and Colin Pope. As a result some 100 named different species were arranged in systematic order for members to examine on Sunday afternoon. Mr. Frazer drew attention to some of the interesting specimens collected, which included four species not previously recorded in the Island – *Amanitopsis strangulata*, *Clitocybe giganteus*, *Inonotus (Polyporus) radiata* and *Polypilus umbellatus*.

The speaker also stressed the importance of positive identification before indulging in a meal of fungi collected in the field, and the special danger of relying on so-called tests, which are still occasionally repeated, such as, "If it peels, it is all right to eat," which is most dangerously misleading, as the most poisonous of all fungi, the Death Cap, specimens of which were on view, peels perfectly. Colour slides were shown of some of the species of fungi which were not obtained on this occasion, and Mr. D. Roberts mounted some specimens under the Society's microscope. Members were then able to examine the display, while tea and biscuits were served by Mrs. Hodgson and Miss Page.

The President thanked all those who had done so much to make the event so successful, and the display remained on view during Monday for the benefit of local school pupils and a party of teachers, who were visiting the centre.

General Meeting on 14th November, 1976.

The report of the eighteenth consecutive Annual Newtown Survey, held from the 29th May to 13th June, was presented by Mr. L. E. Cox, with the assistance of Mr. O. H. Frazer. The programme of films, colour slides and exhibition material had been presented earlier at Cowes High School for the benefit of the students and their parents. A report of the work carried out appears elsewhere in these *Proceedings*.

After tea, prepared by Mrs. B. Palaeologus and family, members heard an illustrated talk by Dr. A. Insole, curator of the Museum of I.W. Geology, Sandown, on the fossils found in the area, and some of the tape-recordings made of bird songs were played by Mr. Pat Ewbank, the reserve warden.

The President thanked Mr. Cox and his many helpers for all their work, which had resulted in such an excellent display and interesting afternoon.

General Meeting on 11th December, 1976.

Mr. B. Shepard gave an illustrated talk entitled, "A Pictorial Interpretation of the Countryside", which was a follow-up to the Archaeological Walk conducted by the speaker in September.

For the benefit of members present, who had been unable to attend the previous walk, Mr. Shepard showed by means of colour slides some of the important features noticed in the area, comprising Bowcombe Down and the valleys on either side, from Forest Road in the north to Garstons in the south, and comparisons were made with the corresponding area to the east of Newport in the region of Burnt House Lane. By studying the pattern of fields bounded by hedges, one could establish the sequence of land development in the area, and of particular interest were those original boundary hedges, which were still noticeable, because other hedges joined them, but did not cross. By counting the number of woody species of trees and shrubs in sample lengths of various hedges, it was possible to obtain an estimate of the approximate ages of the hedges concerned, based on the principles of hedge-dating laid down by Dr. Max Hooper. From surveys carried out in the area some boundary hedges were found to contain 11 species, indicating an age of approximately 500 years, while the Calbourne Road hedges only averaged less than half this number, but the hedge along Down Lane, with no fewer than 17 species, stressed the importance of this ancient highway as probably being the first man-made impression on the area. Further evidence could

be obtained from the study of old maps, deeds and tithe dues, some examples of which were shown, to get a clearer picture of the history of the development of our countryside as we know it.

An animated discussion followed, and the President thanked the speaker for a most interesting evening, and looked forward to more work of this kind being done by members.

General Meeting on 7th January, 1977.

Members saw a number of films made on the Island on varied subjects.

"From Stinging Nettle to Buddleia" was an educational super-8mm film with taped commentary made by Mr. John Goodall with the help of his pupils at Lake County Middle School. It depicted the life history of the tortoise-shell butterfly from the egg, laid on the stinging nettle, to the adult butterfly feeding on the flowers of the buddleia. It contained many excellent close-ups, including the emergence of the adult insect from its pupal case. Mr. Goodall answered questions on the techniques involved in making the film.

"Reflections" was a 16mm sound film made by staff and students of Kingston Polytechnic, depicting a typical summer's day at the Newtown Local Nature Reserve. There was no commentary, but the film was accompanied by appropriate music, which, together with the outstanding photography, resulted in a film of high artistic merit.

After refreshments provided by Mrs. Hodgson and helpers, members had another opportunity to see the 16mm silent film "Birds of Newtown", made by Mr. George Lawrence and Mr. Oliver Frazer in support of the Society's proposal that the Newtown Estuary should be made a local nature reserve. Mr. Frazer provided a spoken commentary.

The President expressed the members' thanks to all the speakers.

Annual General Meeting on 22nd January, 1977.

The President, Mr. John Stafford, referred with regret to the loss suffered by the Society in the death of nine valued members during the year: Mr. W. F. Alderton, M.B.E., Mr. J. H. Bevis, an expert botanist actively engaged in the production of the new Flora of the I.W., Lt.-Col. C. W. Brannon, Col. C. H. Brent-Good, Commodore J. K. Brook, Mr. J. E. Cooper, a member of long standing and Hon. Secretary from 1955 to 1967, when he was elected Vice-President, having been taught about birds by Mr. Reginald Fox, who had contributed chapters to Morey's Guide in 1909, Mr. F. Faraker, Mr. J. E. V. Goodliffe and Miss E. E. Marriott, a Founder Member of the Society. Members stood in silent tribute.

The President spoke of a successful year, when the Society had thrived in several ways, particularly in the amount of co-operation with other bodies, especially in the field of Conservation. We had also been included in the discussions concerning the Queen's Jubilee Appeal. An I.W. Archaeological Committee had been formed and the Council had elected Miss M. Middleton to be our representative. Mr. C. Burland had formed an I.W. Industrial Archaeology Group, which is doing good work in recording. The British Trust for Conservation Volunteers were forming an I.W. Branch of the Conservation Corps to encourage youth organisations in field work, in connection with which the Society could help with guidance and information. We had assisted

the County Council with their Tree Planting Exhibition in February, and other matters would be discussed during the meeting.

The Secretary, Miss H. Blount, referred to a busy year, which, judging by the 25 events already arranged for the months from January to April, was likely to continue.

The Treasurer, Mr. R. D. Hodgson, reported that, despite the difficult times, the Society's finances were in good order, as shown on Statement of Accounts reproduced elsewhere in these *Proceedings*.

The Editor of *Proceedings*, Mr. O. H. Frazer, explained in some detail the reasons for necessary change in future issues, and expressed the hope that a way would be found to ensure quicker dissemination of information to members.

The Conservation Officer, Mrs. D. Frazer, presented her report, which is reproduced elsewhere in these *Proceedings*, as the Local Look Report by Mrs. K. Wadham is also.

Mr. P. Ewbank reported a successful year with the Schools' Liaison Committee, including two meetings in Parkhurst Forest in May and September, when there were demonstrations of techniques in field work for the benefit of teachers, and an exhibition of field work carried out and items of equipment at the Teachers' Centre in November.

As Bird Recorder, Mr. Stafford showed the results of the Breeding Birds Survey, in which many members had taken part, and also referred to current and future surveys being undertaken. In his capacity as Chairman of the I.W. Area Board of the Hampshire & I.W. Naturalists' Trust, he referred to the policy being discussed in Hampshire with regard to rabies and its possible effect on foxes. In the School Nature Quiz, Cowes High School had reached the semi-final. As representative on the Countryside Advisory Panel, he reported that the main item discussed had been the Medina Water Park. The recommendations made, supported by the "Ecological Appraisal" by Colin Tubbs, should help to ensure that the biological value of the valley would not be impaired.

The Officers and Council members were elected, as shown elsewhere in these *Proceedings*.

Dr. A. Insole explained briefly the system of Biological and Geological Recording, for which he was now responsible. The objectives were two-fold, firstly to act as a centre of reference for all Biological and Geological records from the Isle of Wight, and secondly to act in close co-operation with the National Biological Records Centre at Monks Wood and ensure that all records are adequately vetted and passed on through the recognised channels.

Miss Vicky Bishop, district field survey officer based at Carisbrooke Castle Museum, gave an illustrated talk on the work it was proposed to carry out during the current year and appealed for help from members. The main purpose of the survey was to record the many varied sites of archaeological interest before they were obliterated by development, ploughing and erosion.

After tea provided by Mrs. K. Wadham and helpers, Mr. O. H. Frazer showed colour slides taken by members of the past year's activities.

In addition to the above, Working Parties, under the leadership of Mr. D. Cooper, were arranged monthly from May to November inclusive, and each Section also arranged its own full programme of meetings and activities, as indicated in the Section Reports.

SECTION REPORTS

Access to the Countryside

Walks were arranged as follows:

- | | |
|----------------|--|
| 18th January | From Blackwater over part of Stenbury Trail. |
| 15th February | From Nansen Hill to St. Boniface and Littleton Downs. |
| 6th March | From Rowborough over Idlecombe and Rowborough Downs. |
| 11th April | From the Fighting Cocks cross roads, in the Arreton to Sandown area. |
| 31st May | Part of the Stenbury Trail. |
| 20th June | A walk in the Apse Heath area. |
| 17th July | The River Medina Trail. |
| 15th August | The Western Yar Trail. |
| 5th September. | From Blacksmith's Arms to walk over Bowcombe Down. |
| 10th October | From top of Shorwell Shute to walk part of Worsley Trail. |
| 21st November | Walk through Borthwood and part of the Eastern Yar Trail. |

MRS. C. RICHARDSON

Botany

- | | |
|------------|--|
| 4th March | An indoor meeting about the I.W. Flora survey. Mr. R. Kettell and Mr. J. Bevis talked about their work on the survey, but Mr. B. Shepard was unable to get to the meeting. They had made lists of rare plants, which are only known from one or two locations on the Island, and members were asked to watch for these plants especially. They showed slides to illustrate their work. |
| 27th March | A walk in Chillingwood and Rowlands Lane, led by Mr. R. Kettell. A lovely day with wild daffodils in full bloom and the spring woodland flora well out during this warm spring. |
| 25th April | A walk in Brocks Lane, Lushington, led by Mr. J. Bevis. We walked down the lane and studied the very rich spring flora. Mr. Bevis' enthusiasm and patient explanations of all the plants we found helped beginners and showed the whole group what a wealth of varied plants are to be found in the banks of a lane. We went into the woods as well. |
| 15th May | Mr. B. Shepard led a walk from Palmers Brook back to Newport by Fattig Park. |
| 6th June | A walk at Gatcombe, led by Miss K. Page. We met Sir Robert Hobart at Gatcombe House and walked by Gatcombe Church up on to the downs behind Tolt Wood. By the woodland path we saw leopard's-bane, and on the hill we found orchids and other downland plants in profusion, including the blue columbine. |
| 13th June | Mr. R. Kettell led a walk in the Wilderness starting at Cridmore Farm. In spite of the drought boots were needed in this very wet and marshy area, which provided us with the interest of plants on acid soil. Some of the more dramatic were the bogbean, marsh cinquefoil and marsh-orchids. Spotted-orchids were also plentiful |

- 10th July with some very large hybrids of the marsh – and spotted-orchids. We visited Furzey Gardens at Minstead. Unfortunately they were badly affected by the drought, but it was a most interesting visit, as the gardens contain some beautiful trees and shrubs. The newly-made water garden with the pond made a focal point of greenness. A walk round Minstead rewarded us with a visit to the church and past “The Trusty Servant”.
- 26th September Mrs. D. Frazer led a walk through the Forestry Commission woods at Bouldnor. There was a profusion of autumn fruits, and, in spite of the long drought, there were a lot of plants showing. We explored the seashore and marshy area, and saw dodder growing on gorse and heather on the cliff. It was forming seed.
- 16th October Mr. B. Shepard led a fern walk from Carisbrooke, up over Mount Joy and along Watergate Road. We went up the lane opposite Marvel Farm to find a nursery of “fernlets”. We saw ferns on the wall over Mount Joy and the maidenhair fern in the walls at Ralph’s nurseries. Mr. Shepard carefully identified all the main species and demonstrated the differences.
- 17th November An indoor meeting was held to view members’ slides and to discuss the activities of the past year and make plans for further walks next year.

MISS K. PAGE

Geology

Meetings were held as follows:

- 8th January From Gore Cliff car park, to explore the rocks at Rocken End.
 12th February At Chilton Chine, to look for dinosaur bones.
 14th March Colwell Bay, to look for fossils in the soft deposits.
 24th March Prospect Quarry, to look for fossil land molluscs.
 11th April Sandown Bay, to explore the east end of the beach.
 26th May Shanklin Chine.
 26th June Whitecliff Bay, to look for tertiary fossils.
 24th July Atherfield Point, to look for cretaceous fossils.
 21st August Compton Chine for the junction of chalk/greensand.
 15th September Alum Bay for the junction of chalk/tertiary deposits.
 20th October Bouldnor cliff, for oligocene deposits.
 20th November Knowles Farm, for Rocken End.

N. PREECE and DR. A. INSOLE

Mammals, Reptiles and Amphibians

No field meetings were arranged for this year, but members of the section helped with surveys being carried out in connection with a number of species. The main task of the section, however, was in connection with the Newt Survey, which is reported elsewhere in these *Proceedings*.

- 19th November Informal meeting to discuss year’s activities and make plans for next year.

O. H. FRAZER

Microscopical Section

Meetings were held as follows:

- 6th April Indoor meeting at Doric, 12 the Shielings, Freshwater, by kind invitation of Mr. & Mrs. E. H. Burn. A practical demonstration of photomicrography – photography through the microscope – was given by Mr. Burn and Mr. F. E. Neat.
- 6th July At the N.F.U. Boardroom.
- 2nd November At the N.F.U. Boardroom. Mr. E. H. Burn and Mr. F. E. Neat demonstrated first steps in making microscope slides, including the making of sections and staining.

In addition to the above, the Society's microscope was made available for use in connection with a number of general and other section meetings.

D. ROBERTS

Ornithology

- 11th January A very well attended meeting at Woodside with a walk along the beach to King's Quay. Brent Geese, Slavonian and Great Crested Grebes were seen.
- 1st February A walk from Shide to Blackwater along the disused rail track produced many species including two Ruffs, two Water Rails and four Grey Wagtails.
- 28th March Main Bench and West Highdown. Early Wheatears, a Ring Ouzel, Kittiwakes, Shags, Guillemots and Razorbills were seen.
- 25th April Two foxes and a Peregrine were the highlights of a visit to St. Catherines Point where few migrants were about.
- 14th May An extremely well attended meeting which started in Parkhurst Forest and then moved to Clamerkin to listen to Nightingales.
- 11th June The annual quest for Nightjars was held in Brighstone Forest. One seen; wing-clapping and churring heard from four others.
- 2nd July A walk from Alverstone to Blackpan to see the Sand Martin colony.
- 30th August A poorly attended meeting at Newtown Reserve where many species of waders were seen. These included three Little Stint and Blacktailed Godwits, Golden and Grey Plovers in summer plumage.
- 2nd October Although a good number turned out, the meeting at St. Catherines Point had to be abandoned because of very heavy rain.
- 29th October Firestone Copse, where birdwatchers outnumbered the birds; only four species were seen.
- 26th November An indoor meeting with an illustrated talk about Thrushes, Chats and their allies. John Stafford outlined the results of the Nightingale Census.
- 26th December East Medina between Folly and the Medway Queen. Twenty Little Grebe, a Goosander and nineteen Tree Sparrows were a welcome sight.

Members again took part in the Estuaries Enquiry and Ornithological Habitat Register for the B.T.O., Wild Fowl Counts for the Wild Fowl Trust and Beached Birds Count for the R.S.P.B.

During May the Island was searched for singing Nightingales as part of the Nightingale Survey for the B.T.O.

J. M. CHEVERTON

Seashore

Following the Annual General Meeting and a chance remark about the Seashore Section, dormant since the late Mr. Prebble, conchological expert, retired and moved to the mainland, I found myself paid the compliment of being made the next leader, despite my inexperience. Consequently a "revival meeting" was held on 11th February, attended by some 20 members, at which I gave a short illustrated talk on rock pools and shore life, and a programme was drawn up for the rest of the year.

Subsequently ten meetings were held and were more or less well attended. August was omitted to free members for Local Look in accordance with the usual practice.

At Binstead in March Miss Jones found a hydroid, which had to go to Plymouth Marine Laboratory for identification. It was *Scrophocellaria reptans*, which does not seem to have been noted before. Porcelain crabs were also found.

At Seagrove Bay in April the Japanese seaweed, *Sargassum muticum*, was sought out. Spawn of *Eulalia viridis* was found, and the position of the *Dentalium entalis* sandbank was noted for future work.

An extremely useful visit to the Newtown Nature Reserve took place in May. The Warden took over in perfect weather and especially enjoyed was the sight of a shoal of whiting, gleaming silver in the sunlit water.

When the Yarmouth shore was visited in June on a very hot day, members were agreeably surprised at the amount of life to be seen, including a tufted chiton.

A satisfactory display depicting Zonation, *Sargassum* and *Zostera* was prepared for the Local Look Exhibition, and members worked hard on this.

Despite the drought conditions, the weather blew and rained on the July evening we met at Bonchurch, but all the same the low tide revealed an interesting littoral area for a future visit.

Appalling rain accompanied the September trip to King's Quay and intimidated most members. However, a lovely evening followed and parties of bass were frequently seen nosing out of the water. Peacock tube-worms were quite a feature, while the acreage of *Zostera* promises much work there in the future.

On Bembridge Ledge in October eight valiant members were nearly drowned in the torrential rain or blown into the sea by a force-7 gale. The welcome hospitality of the Science Lab. at Bembridge School warmed us up again, and members were able to use some of the new microscopes, which had just arrived.

In November, at Havenstreet, by kind invitation of Mrs. G. Bunce, seaweeds were identified and the pressing of specimens was practised with some very good results.

In December, at a marine classification evening at Brighstone, by kind invitation of Mr. and Mrs. R. D. Hodgson, we were happy to welcome the President. There seemed to be some slight dismay from some, when a herring was produced for dissection and inspection of its lateral line. Extremely frosty roads made travelling difficult.

MRS. I. GASKIN

THE MARINE MACROFAUNA AND FLORA OF THE MEDINA ESTUARY

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Summary

Data are presented concerning the substrata, salinity and marine macrofauna and flora of the middle and upper reaches of the Medina Estuary, Isle of Wight. Most of the intertidal area is mudflat with varying quantities of shell debris, shingle and, occasionally, boulders. The flow of freshwater down the Medina River appears small relative to the volume of the estuary and, generally, salinity levels of $>15\%$ occur only in the upper reaches. Some 93 invertebrates have been recorded but only relatively few were common, the dominants being *Cereus pedunculatus*, *Cirriformia tentaculata*, *Neanthes* spp. *Peloscolex benedeni*, *Hydrobia ulvae*, *Littorina* spp., *Abra tenuis*, *Cardium edule*, *Mya arenaria*, *Carcinus maenas* and *Corophium volutator*. The commonest fish in the estuary appeared to be *Atherina presbyter*, *Crenimugil labrosus*, *Liza auratus*, *Platichthys flesus* and *Pomatoschistus* spp., while the dominant algae were *Enteromorpha* spp. and *Ulva lactuca*, which achieved almost 100% cover in some parts, and *Fucus spiralis* which was attached to many of the larger stones.

Introduction

The River Medina drains northwards from the central region of the Isle of Wight and its estuary extends from Newport to Cowes, where the river enters the Solent. Although its importance as a commercial waterway has declined in recent years, interest in the recreational potential of the Medina Estuary has grown. In order to emphasise the importance of the estuary and its surroundings to nature conservation, the Nature Conservancy Council published an ecological appraisal of the area (Tubbs, 1975). Biologists from the Hayling Island Marine Laboratory (Department of Biological Sciences, Portsmouth Polytechnic) contributed data on the marine biology of the estuary to this appraisal. In the following paper, these data are presented in more detail, together with information collected subsequent to 1975.

General characteristics of the estuary

The Medina Estuary has a length of 6.8 km but its width never exceeds 0.4 km (Fig. 1). It has a shoreline of 14.4 km and a high water (H.W.M.M.T.) surface area of 146 ha. At low water a single, relatively wide but shallow channel remains, flanked by mudbanks which cover an area of 66 ha. The mouth and lower estuary, through Cowes, are lined by docks, boatyards and marinas, but the middle and upper reaches are largely bordered by fields, hedgerows and woods. Many small pleasure craft are moored in the middle and lower reaches, and on the east bank about 2.5 km below Newport, the Wight Marina has transformed the largest side branch of the estuary (Mill Pond) into a semi-tidal, marine lake controlled by a lock system.

Potentially, there are three major effluent discharges within the estuary. The Fairlee Sewage Works release, at all states of tide, a dry weather flow (d.w.f.) in excess of 4.5 million litres per day (m.l.d.) primary treated effluent (solids settled out before

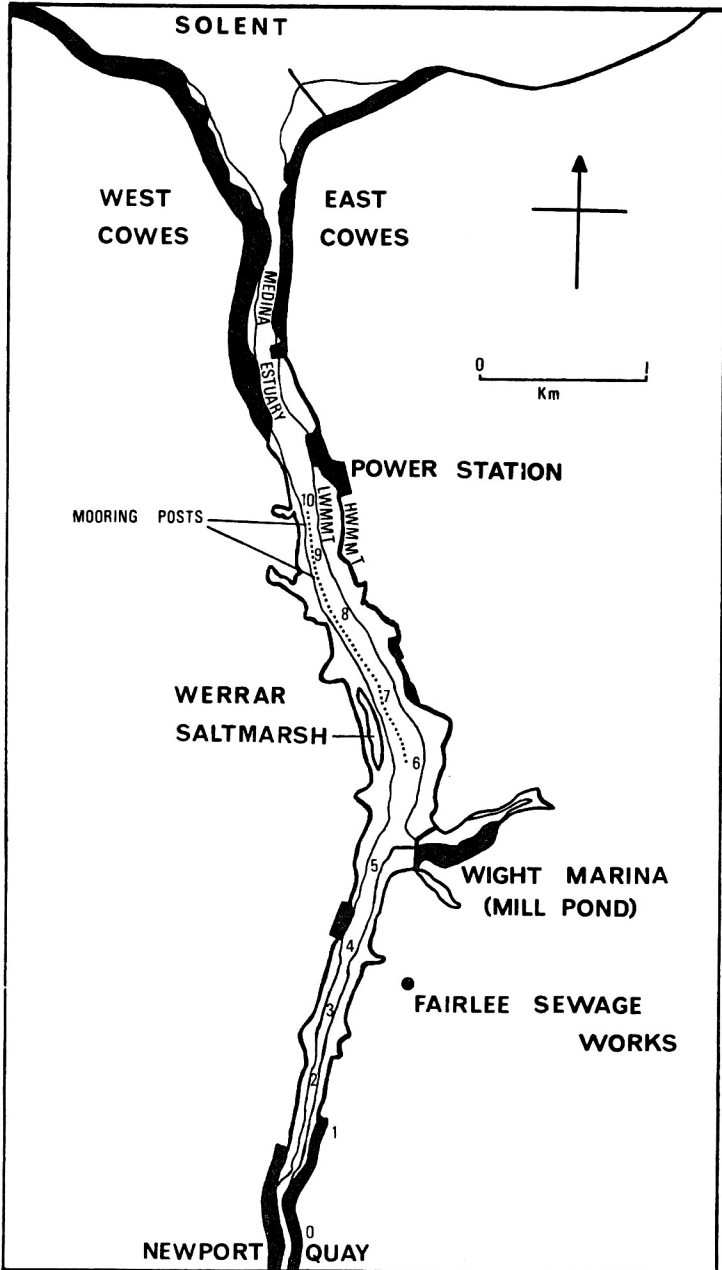


FIG. 1.—The Medina Estuary.
— indicates docks and similar installations.

discharge) about 2 km below Newport. A further d.w.f. of more than 2.2 m.l.d. is discharged from some 13 separate outlets in Cowes. Finally, the Central Electricity Generating Board is licensed to abstract and return, warmed, up to 31,800 m.l.d. salt water for cooling purposes at the Kingston Power Station just above Cowes. However, this abstraction is now intermittent and occurs mainly in winter.

Methods

Sampling points were established at 0.5 km intervals from Newport Quay (Station O) to just above Kingston Power Station (St. 10), close to Cowes. The marine macrofauna and flora were investigated at each station and at any other seemingly significant points lying between stations. The epifauna and physical characteristics of each site were assessed by eye, occasionally backed up by the use of a 0.25 sq. m. quadrat. The infauna was investigated not only by digging and sorting on site but also by the collection of mud cores of area 0.017 sq. m. The cores were returned to the laboratory, sieved on a 1mm mesh sieve, and the fauna retained was identified and counted. Free-swimming species were collected by hand-net and beach-seine while an Ockelmann Sledge dredge was used, once, to collect sublittoral epifauna from the middle estuary between stations 7 and 10.

Results

1. Salinity

Salinity values were recorded in autumn 1975 and spring 1977 at various points along the estuary (Table 1). The data suggest that in autumn a significant reduction from Solent levels (31-33‰) occurs only in the upper estuary during low water, while in spring lowered salinities occur much further downstream. Variations in the flow of the River Medina are presumably responsible; casual observations of the water flow through Newport docks during low water indicated that the volume of freshwater coming downstream was considerably greater in spring, 1977, than in autumn, 1975. To a degree, this probably reflects the wet winter of 1976-77 but further observations are needed to establish the normal seasonal flow rates of the river.

Site	Date	State of tide	Salinity ‰
St. 0, Newport Quay	1.11.75	½ hour after H.W.	30
As above	„	L.W.	2
St. 1, east	„	L.W.	9
St. 2, east	„	½ hour before L.W.	27
St. 5/6, main channel off Wight Marina	31.10.75	3 hours after H.W.	33
As above	„	L.W.	31
Wight Marina pool at entrance	„	Non tidal	31.5
Wight Marina pool 150m up from entrance	„	Non tidal	31
St. 7, mid channel	13.11.75	L.W.	32
St. 0, Newport Quay	29.3.77	1 hour after L.W.	0.5
St. 1, east	„	1 hour after L.W.	4
St. 5/6, Wight Marina outer wall	„	½ hour after L.W.	18
St. 7, east	„	L.W.	25

Table 1. Salinity data from the Medina Estuary.

2. Substrata

Except for the dockside areas, the shores of the estuary are gently sloping and muddy. Between M.H.W.S. and M.H.W.N. a low bank often marks the edge of fields, hedgerows and woods. Along the upper reaches on the eastern shore, trees, especially oaks, hang out over the estuary, while on the western bank, near Folly Point, the Werrar Saltmarsh forms a fairly large island covered only by spring tides. Much of the strandline, especially on the eastern bank, is marked by deposits of angular, flint gravel and there are outcrops of similar material along parts of the margin and bed of the low tide channel. Below high water mark, the proportion of gravel in the muddy sediment decreases and by M.T.L. it is generally scarce. Below M.T.L. the shore largely consists of very soft mud, particularly on the west bank. Along the low tide channel and over many of the mudflats, old shells such as *Buccinum undatum* L., *Cardium* (*Cerastoderma*) *edule* L., *Macoma balthica* (L.), *Mya arenaria* L., *Ostrea edulis* L. and *Scrobicularia plana* (da Costa) are common. Together with stones, these shells provide surfaces for colonisation by a number of epibenthic species. Large boulders are scarce except where they have been accumulated by man's agency, e.g. along the base of the Wight Marina outer wall and lining a conduit carrying a stream/drain to low water mark across the eastern shore between stations 8 and 9. Where present, they are generally covered by a considerable epibenthos as are other firm structures, e.g. mooring posts.

3. Macrofauna

One hundred and three species have been recorded (see Appendix 1) and the distribution along the estuary of the major invertebrates is indicated in Fig. 2. The small gastropod, *Hydrobia ulvae* (Pennant) is present throughout the intertidal zone and is by far the most abundant epibenthic species. Greatest densities occurred between M.H.W.N. and M.T.L. and, although the core samples indicated a maximum density of 7,500/m², estimated densities were often considerably in excess of this. *Hydrobia* was especially abundant on the steep banks of the many channels permeating the Werrar Saltmarsh while, on the soft, alga-strewn, mud forming the channel beds, large *Littorina saxatilis* (Olivi) were common. *L. saxatilis* was also frequently abundant near M.H.W.N. especially in the more gravelly situations, while the larger species, *L. littorea* (L.) was common in stoney areas below M.T.L. *L. littoralis* (L.) was present from St. 2 downwards but only amongst the larger algae on which it feeds. *Lepidochitona cinerea* (L.), *Patella vulgata* L. and *Mytilus edulis* L. were occasionally recorded at and below St. 7. The 2 former species occurred mainly on large boulders while the latter favoured stoney mud below M.T.L.

Elminius modestus Darwin was widespread on the larger stones and other solid structures, with a few even colonising the dock walls at Newport. Other barnacle species were much scarcer although *Balanus balanoides* was sometimes common on mooring posts in the middle and lower reaches of the estuary. Of the other epibenthic Crustacea, the amphipod *Orchestia gammarellus* (Pallas) was common beneath algal debris on the strandline and other amphipods such as *Gammarus* spp., *Marinogammarus* spp., *Melita palmata* (Montagu) and *Hyale nilssoni* (Rathke) were present beneath stones and/or algae from M.H.W.N. downwards, in all but the uppermost reaches. The isopods *Cyathura carinata* (Krøyer) and *Idotea chelipes* (Pallas) were also frequently found in the middle estuary, the former on weed-strewn and bare mud, the latter only amongst algae.

The bryozoan *Conopeum reticulum* (L.) were often present on larger stones below St. 2 on the middle and lower shore, as was the serpulid polychaete *Mercierella enigmatica* Fauvel. Other serpulids were more scarce, however, *Janua pagenstecheri* (Quatrefages) occurring in small numbers on posts and boulders at Sts. 7, 8 and 9, and *Pomatoceros triqueter* (L.), being found only on the man-made reef of boulders between Sts. 8 and 9.

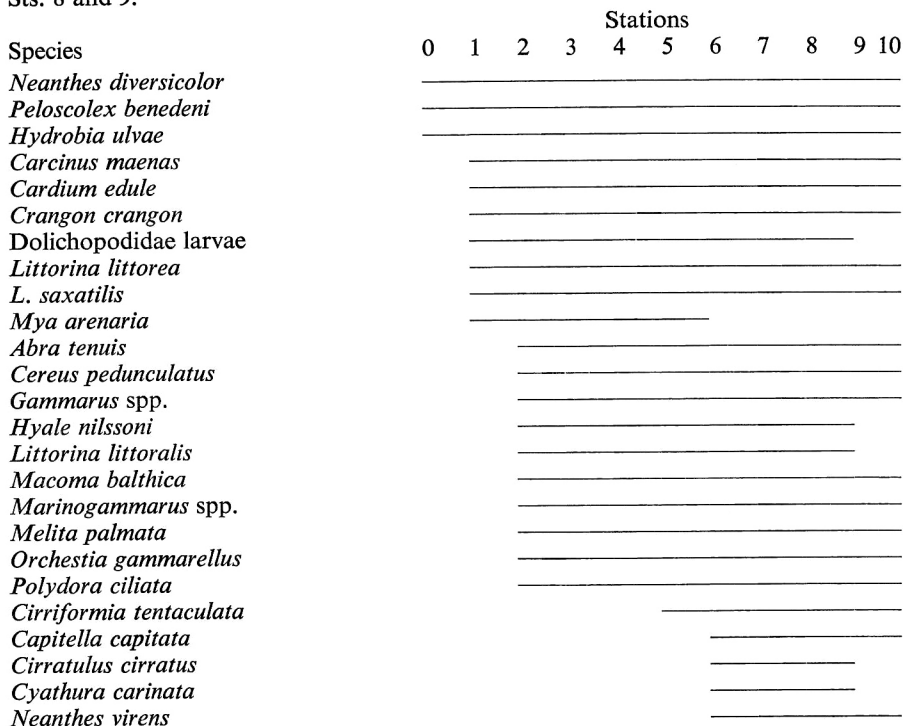


FIG. 2. Distribution of selected intertidal species along the upper and middle reaches of the Medina Estuary, from its head at Newport (St. 0) to just above Cowes.

The frequency of occurrence in the core samples and the maximum recorded densities of the commonest, intertidal, infaunal species are shown in Table 2. The dominants were the amphipod *Corophium volutator* (Pallas), the large polychaetes *Neanthes* (=Nereis) *diversicolor* (Muller), *N. virens* (Sars) and *Cirriformia tentaculata* (Montagu), the oligochaete *Peloscolex benedeni* Udekem and the anthozoan *Cereus pedunculatus* (Pennant). *C. volutator* was most numerous on the middle and lower shore with the greatest density being recorded just below M.T.L. at St. 6, east. *N. diversicolor* was common at almost all shore levels in the upper estuary but in the middle and lower reaches it was most numerous above M.T.L. in fairly stoney mud. Maximum density occurred between M.H.W.N. and M.T.L. at St. 6 east. *N. virens* and *C. tentaculata* generally favoured the middle and lower shores, the former being most numerous at

and just below M.T.L. at Sts. 9 east and 8 west, respectively, the latter close to M.L.W.S. at St. 9 east. *P.benedeni* was again common at most shore levels above St. 7 with maximum density being recorded at St. 2 east between M.H.W.N. and M.T.L. Below St. 7, *P.benedeni* was more patchily distributed, being relatively scarce or absent from most core samples but reaching a density of 45/core in one sample from St. 9 east. *C.pedunculatus* occurred in small numbers above M.T.L. at most stations but, generally, was most numerous below this level, with the maximum density being recorded from near M.L.W.S. at St. 9 east. Mud containing plenty of pebbles and old shells was especially favoured since these provided solid surfaces at or near the mud surface to which the anemones could attach.

Species	% Frequency in Core Samples [based on 48 cores]	Maximum Nos/Core [Area of Core= 0.0176 sq. m.]
Coelenterata		
<i>Cereus pedunculatus</i>	60	12
Nemertini		
<i>Lineus</i> sp.	4	2
Annelida		
<i>Neanthes diversicolor</i>	75	43
<i>N.virens</i>	40	7
<i>Polydora ciliata</i>	21	2
<i>Cirriformia tentaculata</i>	41	13
<i>Cirratulus cirratus</i>	21	9
<i>Capitella capitata</i>	20	7
<i>Peloscolex benedeni</i>	54	45
Mollusca		
<i>Hydrobia ulvae</i>	38	25
<i>Cardium edule</i>	21	2
<i>Abra tenuis</i>	21	4
<i>Macoma balthica</i>	4	2
<i>Mya arenaria</i>	4	6
Crustacea		
<i>Cyathura carinata</i>	13	3
<i>Bathyporeia pilosa</i>	4	4
<i>B.sarsi</i>	6	6
<i>B.pelagica</i>	2	1
<i>Corophium volutator</i>	79	80
<i>Carcinus maenas</i>	23	4
Insecta		
Dolichopodidae larvae	17	6

TABLE 2. Distribution and Maximum Density of Selected Infauna from the Medina Estuary.

Among the lamellibranchs, *Cardium edule* and *Abra tenuis* (Montagu) were recorded at most stations, being most numerous at M.L.W.N. St. 6 east, and M.H.W.N. – M.T.L. St. 2 east, respectively. *Macoma balthica* was also widespread but was relatively

scarce (maximum density at M.T.L., St. 7 east) while *Mya arenaria* was found only above St. 6 but was common on middle and lower shores between Sts. 2 and 4 (maximum density at M.H.W.N. – M.T.L., St. 2 east). Despite the presence of old shells, no adult *Scrobicularia plana* were found although a few juveniles were collected in a small side creek just above St. 4 east. *C.edule* was the most easily found bivalve because of its size and preference for the shallow and surface sediment layers; the other species were discovered only by digging or coring.

Amphipods of the genus *Bathyporeia* and the polychaete *Arenicola marina* L. sparsely colonised the sandier muds upto St. 2. Larvae of the dipteran insect family Dolichopodidae were similarly widespread but favoured weed-strewn mud. Bare mud in the middle reaches of the estuary contained a few of the tubicolous polychaetes *Ampharete acutifrons* (Grube) and *Melinna palmata* Grube. The decapods *Carcinus maenas* (L.) and *Crangon crangon* (L.) were ubiquitous although the latter favoured the water margin and was most easily collected by hand-net. Similar net sampling in the Wight Marina pool and the adjacent inlet which harbours the paddle steamer "Ryde Queen", revealed the presence of the isopod *Gnathia* sp., *Corophium volutator*, the mysids *Neomysis interger* (Leach) and *Mesopodopsis slabberi* (van Beneden), the decapod *Palaemonetes varians* (Leach) and the fish *Pomatoschistus microps* (Krøyer) and *Clupea harengus* L. (one juvenile).

The Ockelmann Sledge samples collected from the sublittoral between Sts. 7 and 10, contained some epibenthic species recorded on the shore and a number not previously found in the estuary (see Appendix 1). *Hymeniacion perleve* (Montagu) and, especially, *Haliclona* sp. were common and many of the smaller species taken in the dredge were found on or in these sponges. *Pisidia* (= *Porcellana*) *longicornis* (L.) was numerous as were *Palaemon serratus* (Pennant) and *Pagurus bernhardus* (L.).

Table 3 details the fish caught by use of a beach seine-net in the middle reaches of the estuary. The gobies *Pomatoschistus microps* and *P.minutus* (Pallas), the mullets *Crenimugil labrosus* (Risso) and *Liza auratus* (Risso), the sandsmelt *Atherina presbyter* Cuvier and the flounder *Platichthys flesus* (L.) made up the bulk of the catches.

Species	12.11.75		12.4.76	10.5.76	
	St. 7W	St. 8E	St. 8/9E	St. 6/7E	St. 8/9E
	1 haul	2 hauls	2 hauls	1 haul	1 haul
<i>Dicentrotus labrax</i>	1 juv.	1 juv.			3 juv.
<i>Gobius niger</i>					5-10
<i>Pomatoschistus microps</i>	>10	>10	>10	>10	>10
<i>P.minutus</i>	5-10	5-10			
<i>Crenimugil labrosus</i>	1	1	>10		
<i>Liza auratus</i>		2	>10		
<i>Atherina presbyter</i>	>10 'O' Group	>10 'O' Group	>10 Various age groups	7 '1' Group	>10 '1' Group
<i>Platichthys flesus</i>		2 juv.	5-10 juv.	5-10 juv.	5-10 juv.
<i>Solea solea</i>					1 juv.

TABLE 3. Details of the fish captured by seine-net in the Medina Estuary.

4. Flora.

A list of the algae recorded in this survey is given in Appendix 1. Many were identified in the laboratory rather than in the field and distributional data for most is rather scant.

Ulva lactuca L. and *Enteromorpha* spp. were recorded throughout the estuary and often a distinct green band was apparent along the shore between M.H.W.N. and M.T.L. Both were abundant in the channels and pools scattered about the Werrar Saltmarsh and often achieved a 90-100% cover, *Fucus vesiculosus* L., generally with very few bladders on the fronds, was also common between M.H.W.N. and M.T.L. but its abundance was related to the frequency of stones and boulders to which it could attach. It was absent at St. 0 and in the Wight Marina pool. *Fucus serratus* L. was recorded only as small plants on the boulder reef between Sts. 8 and 9. *Ascophyllum nodosum* (L.) was dominant on this reef and it was common at St. 9 east and on the outer wall of the Wight Marina where large boulders provided suitably solid attachment points.

Discussion

During 1976, biologists from the Southern Water Authority used a 0.1m² Hunter grab to sample the sublittoral infauna of the Medina Estuary at three sites, Newport Docks, Dodnor Sailing School (between Sts. 3 and 4) and Cowes Harbour Entrance (Soulsby, pers. comm.). At the two former sites a total of 14 species were collected, of which 4 polychaetes, *Pseudopolydora antennata* (Claparede), *Streblospio shrubsolii* (Buchanan), *Tharyx marioni* (Saint-Joseph) and *Hydroides norvegica* Gunnerus, have not been recorded intertidally in the Medina. The Cowes Harbour Entrance samples yielded 29 species, 14 of which have not been found further up the estuary. *Neanthes diversicolor* dominated the Newport Dock samples, which agrees with the intertidal data, but at Dodnor Sailing Club the cirratulid, *Tharyx marioni*, was dominant although it was not found intertidally. *T. marioni* has been recorded from intertidal mud in Langstone Harbour (D. J. Nicholls, pers. comm.) and its absence intertidally in the Medina is therefore somewhat surprising. Neither of the commonest intertidal cirratulids of the Medina (*Cirratulus cirratus* and *Cirriformia tentaculata*) appeared to penetrate up the estuary as far as Dodnor Sailing School and only *C. tentaculata* occurred in the S.W.A. samples and then only in those from Cowes Harbour Entrance. Outside the Medina, *C. tentaculata* has been recorded from a variety of muddy sediments (Marine Biological Association, 1957) and abundant intertidal mudflat populations have been recorded in Southampton Water (George, 1964) and Milford Haven (Cripp *et al.*, 1971).

Although a variety of substrata occur in the Medina Estuary and result, overall, in a moderately diverse fauna, the majority of the intertidal zone is mudflat where, as is typical of this habitat, the number of organisms is high but species diversity is low. Consequently the total biomass and production of the estuary's macrobenthos largely depends on the success of a relatively few species which therefore assume a major role in the food chains supplying both the fish and bird populations of the estuary. Some 60 species of birds have been recorded and although the total numbers are relatively small, the density per unit area of mudflat are rather high compared to other similar areas in the Solent (Tubbs, 1975). The mullets, *Crenimugil labrosus* and *Liza auratus*, probably make the major contribution to the total fish biomass during the summer but the numerically dominant species are *Pomatoscistus* spp., *Platichthys flesus* and

Atherina presbyter. The mullets are mainly browsers on diatoms and epibenthic algae although some invertebrates are also taken (Wheeler, 1969). The remaining species are carnivores, with *A. presbyter* feeding almost exclusively on plankton and the rest taking benthos and bottom plankton. *Pomatoschistus* spp., *A. presbyter* and juveniles of larger species, in turn make up an important food source for a number of birds including herons, cormorants and grebes.

The Medina mudflat fauna appears to be at least as abundant as that of Langstone Harbour and a number of species are dominant in both localities e.g. *N. diversicolor*, *P. benedeni* and *H. ulvae* (Anon, 1976). Together with *Littorina* spp. and *C. maenas*, these species are also the commonest intertidal invertebrates in the lower Medway Estuary (Wharfe, 1977) but on a mudflat in the Lynher Estuary (Cornwall) *Nephtys hombergii*, *Ampharete acutifrons*, *Mya arenaria*, *Scrobicularia plana*, *Cardium edule* and *Macoma balthica* are dominant (Warwick & Price, 1975). All of these latter species also occur in the Medina Estuary and some are common; the differences in their success in the two estuaries presumably reflect differing environmental conditions at the two localities.

Acknowledgements

This survey was supported financially by the Nature Conservancy Council and I am grateful to Mr. C. R. Tubbs, N.C.C. Hampshire, for arranging this. I should also like to thank all the members of Portsmouth Polytechnic Department of Biological Sciences who assisted with the work. I am particularly indebted to Mr. C. J. Palmer and Mr. J. Hepburn for the collection of the fish data, and to Mrs. C. A. Fitzsimons for special assistance in the collection of other field data.

Appendix 1. Species List.

FAUNA

Nomenclature follows that of the Plymouth Marine Fauna (Marine Biological Association, 1957) except: for polychaetes see also Hartman (1959; 1965), Knight-Jones & Knight-Jones (1977) and Pettibone (1963); for molluscs see also Tebble (1966); for crustaceans see also Allen (1967) and Barnard (1958); for bryozoans see also Ryland (1965); for vertebrates see also Wheeler (1969).

* Species recorded from the shore and the sublittoral

† Species recorded from the sublittoral only

PORIFERA

Cliona celata Grant †

Haliclona sp. †

Hymeniacidon perleve (Montagu) *

Leucosolenia sp.

Sycon ciliatum Fabricius

COELENTERATA

Cereus pedunculatus (Pennant) *

Eudendrium ramosum (L.) †

Laomedea flexuosa Hincks

L. gelatinosa (Pallas) †

NEMERTINI

Cerebratulus sp.

Lineus sp.

ANNELIDA: Polychaeta

- Ampharete acutifrons* (Grube)
Arenicola marina (L.)
Capitella capitata (Fabricius)
Cirratulus cirratus (Muller)
Cirriformia tentaculata (Montagu)
Dodecaceria concharum Oersted †
Glycera convoluta Keferstein
Heterocirrus sp.
Janua (Jauna) pagenstecheri (Quartrefages)
Lagisca extenuata (Grube) *

- Malacoceros tetracerus* (Schmarda)
Melinna palmata Grube
Mercierella enigmatica Fauvel *
Neanthes diversicolor (Muller)
N. virens (Sars)
Nephtys hombergii Savigny
Polydora ciliata (Johnston)
Pomatoceros triqueter (L.)
Typosyllis prolifera (Krohn) *

Oligochaeta

- Peloscolex benedeni* Udekem

MOLLUSCA: Polyplacophora

- Lepidochitona cinerea* (L.)

Gastropoda

- Buccinum undatum* L. †
Crepidula fornicata (L.) †
Gibbula cineraria (L.) †
G.umbilicalis (da Costa) †
Hydrobia ulvae (Pennant)

- Littorina littoralis* (L.)
L. littorea (L.)
L. saxatilis (Oliv)
Nassarius reticulatus (L.) †
Patella vulgata L.

Lamellibranchia

- Abra tenuis* (Montagu)
Cardium (Cereastoderma) edule L.
Macoma balthica (L.)

- Mya arenaria* L.
Mytilus edulis L.
Scrobicula plana (da Costa)

ARTHROPODA: Crustacea

- Atylus swammerdami* (Milne Edwards) †
Balanus balanoides (L.) *
B.crenatus Bruguiere *
B.improvisus Darwin †
Bathyporeia pelagica (Bate)
B.pilosa Lindstrom
B.sarsi Watkin
Carcinus maenas (L.) *
Corophium acherusicum Costa *
C.sextoni Crawford †
C.volutator (Pallas)
Crangon crangon (L.) *
Cyathura carinata (Krøyer)
Elminius modestus Darwin *
Gammarus sp.
Gnathia sp.
Hyale nilssoni (Rathke)

- Idotea chelipes* (Pallas)
Jaera sp.
Leucothoe spinicarpa (Abildgaard) †
Ligia oceanica (L.)
Marinogammarus sp. *
Melita palmata (Montagu) *
Mesopodopsis slabberi (Van Beneden)
Microdeutopus anomalous (Rathke) †
Neomysis interger (Leach)
Orchestia gammarellus (Pallas)
Pagurus bernhardus (L.) †
Palaemon serratus (Pennant) †
Palaemonetes varians (Leach) *
Perioculodes longimanus (Bate & Westwood) †
Pisidia longicornis (L.) †
Sphaeroma rugicauda (Leach)

Insecta

Dolichopodidae larvae

Anurida maritima Laboulbene

Myriapoda

Scolioptanes maritimus (Leach)

Pycnogonida

Anaplodactylus pygmaeus (Hodge)*Pycnogonum littorale* (Strøm) †

BRYOZOA

Alcyonidium spp.*Bowerbankia gracilis* Leidy **B.imbricata* (Adams)*Cryptosula pallasiana* (Moll) **Pedicellina cernua* (Pallas)

CHORDATA: Tunicata

Molgula sp.*Styela clava* Herdman

Vertebrata

Atherina presbyter Cuvier*Clupea harengus* L.*Crenimugil labrosus* (Risso)*Crenimugil labrosus* (Risso)*Dicentrotus labrax* (L.)*Gobius niger* L.*Liza auratus* (Risso)*Platichthys flesus* (L.)*Pomatoschistus microps* (Krøyer)*P.mintus* (Pallas)*Solea solea* (L.)

FLORA

Nomenclature as Parke & Dixon (1976).

BACILLARIOPHYCEAE

Coscindodiscus sp.*Melosira* sp.*Pleurosigma* sp.

CYANOPHYCEAE

*Entophysalis deusta**Microcoleus lyngbyaceus* (as *Lynbgya semiplena*)*Oscillatoria* sp.*Spirulina* sp.

RHODOPHYCEAE

*Catenella caespitosa**Griffithsia flosculosa**Hildenbrandia rubra**Rhodochorton* sp.

CHLOROPHYCEAE

*Chaetomorpha linum**Enteromorpha intestinalis* subsp. *compressa**E.intestinalis* subsp. *intestinalis**E.prolifera**E.* sp.*Rhizoclonium riparium**Ulva lactuca*

PHAEOPHYCEAE

*Ascophyllum nodosum**Elachista fucicola**Fucus serratus**F.spiralis**Petroderma maculiforme*

References

- ALLEN, J. A. (1967). "*The fauna of the Clyde Sea Area. Crustacea: Euphausiacea and Decapoda*", Scottish Marine Biological Association, Millport. 116 pp.
- ANON (1976). "*Langstone Harbour study. The effect of sewage effluent on the ecology of the harbour*", Report to the Southern Water Authority. Portsmouth Polytechnic, 356 pp.
- BARNARD, J. L. (1958). "Index to the families, genera and species of the gammaridean Amphipoda (Crustacea)", *Allan Hancock Foundation Publications, Occasional Paper 19*, 1-145.
- CRAPP, G. B., WITHERS, R. G. AND SULLIVAN, C. E., (1971). "Investigations on sandy and muddy shores", in E. B. Cowell (ed.), *The ecological effects of oil pollution on littoral communities* London, Institute of Petroleum, pp. 208-216.
- HARTMAN, O. (1959). "Catalogue of the polychaetous annelids of the world. Parts I & II", *Allan Hancock Foundation Publications, Occasional Paper 23*, 1-628.
- HARTMAN, O. (1965). "Catalogue of the polychaetous annelids of the world. Supplement 1960-1965 and index", *Allan Hancock Foundation Publications, Occasional paper 23*, 1-197.
- HEALEY, M. C. (1971). "The distribution and abundance of sand gobies, *Gobius minutus*, in the Ythan estuary", *J. Zool., Lond.* 163, 177-229.
- KNIGHT-JONES, P. AND KNIGHT-JONES, E. W. (1977). "Taxonomy and ecology of British Spiorobidae (Polychaeta)", *J.mar.biol. Ass. U.K.* 57, 453-499.
- MARINE BIOLOGICAL ASSOCIATION, 1957. "*Plymouth Marine Fauna*", 3rd Edition, 457 pp.
- PARKE, M. AND DIXON, P. S. (1976). "Check-list of British marine algae – third revision", *J. mar. biol. Ass. U.K.* 56, 527-594.
- PETTIBONE, M. H. (1963). "Revision of some genera of polychaete worms of the family Spionidae, including the description of a new species of *Scolelepis*", *Proc. biol. Soc. Wash.* 76, 89-104.
- RYLAND, J. S. (1965). "*Catalogue of main marine fouling organisms. 2, Polyzoa*", Paris, OECD, 82 pp.
- TEBBLE, N. (1966). "*British bivalve seashells*", London, British Museum (Natural History), 212 pp.
- TUBBS, C. R. (1975). "*The Medina Estuary: an ecological appraisal*". Report to the Isle of Wight County Council. Nature Conservancy Council, Lyndhurst, 21 pp.
- WARWICK, R. M. AND PRICE, R. (1975). "Macrofauna production in an estuarine mud-flat", *J. mar. biol. Ass. U.K.* 55, 1-18.
- WHARFE, J. R. (1977). "An ecological survey of the benthic invertebrate macrofauna of the lower Medway Estuary, Kent", *J. Anim. Ecol.* 46, 93-113.
- WHEELER, A. (1969). "*The fishes of the British Isles and North-west Europe*". London, Macmillan, 613 pp.
- WITHERS, R. G. (1972). "*Aspects of the ecology of marine sand-dwelling macrobenthos*", PhD Thesis, University of Wales, 205 pp.

CONSERVATION REPORT FOR 1976

By Dorothy Frazer

The year 1976 had been previously designated by the Council of Europe for the "European Wetlands Campaign" with the aim of drawing attention to the importance of wetland habitats as a vital need for wildlife and a natural reservoir for water. The prolonged drought and heat from Spring to Autumn, following the drought of 1975, and the consequent restrictions on the use of water brought home to everyone the message of the campaign, which was used also as the theme for the Society's Local Look exhibition. As a preliminary to this, a small display was arranged at the Ventnor Horticultural Society's Easter show at the Winter Gardens. This included a tank of live newts, which, together with drawings to aid in the identification of the three species, was designed to help members of the public to take part in the Society's newt survey. The Nature Conservancy Council laid special emphasis on the importance of these and other biological records in assessing the long term effects of the drought. In the Brighstone and Mottistone areas the drought and sporadic fires in the Forestry Commission plantations may have caused the red squirrels to migrate to the valleys, and their foraging in village gardens caused much interest.

Seeds of the ribwort plantain were sown to provide food plants for the larvae of the Glanville fritillary butterflies. There was a very good hatch of caterpillars and they were seen in abundance along the south coast. Adult insects, which had been bred in Hampshire, were also released, but it was thought that they would not make much difference to the total population, because of the imbalance of the sexes of the released butterflies.

A noticeable effect of the drought on vegetation was that, as the smaller plants shrivelled in the heat, the perennials and shrubs with deeper roots made rampant growth. This was particularly evident in the wood calamint site, where some extra trimming was carried out to reduce the hemp-agrimony and brambles. The elm trees continued to decline as the effects of the drought were added to the depredations of Dutch Elm disease. The I.W. County Council's replacement tree-planting programme had to be delayed until conditions were more favourable, but their tree nursery in Parkhurst Forest was successfully maintained by Mr. S. Traves of the Joint Planning Technical Unit, who was also involved with the most successful "Trees for the Island" exhibition at the College of Arts and Technology.

Co-operation was maintained between the Society and the Hampshire and Isle of Wight Naturalists' Trust, whose conservation officer, Jim White, attended the Society's conservation committee meeting in February, and I attended the Trust's conservation committee meeting in Portsmouth in May. In the meantime, Stag Copse, which lies to the north-east of the Stag Inn at Parkhurst, had come under the management of the Trust at the instigation of the brewery which owns it. A preliminary survey of the copse was made on 31st March, when the President, Mr. John Stafford, as Area Board Chairman, and myself met on site Jim White, together with Mike Gould and Peter Newberry of the Wiltshire Trust for Nature Conservation. We discovered that much of the copse consists of hornbeam, which is not common on the Island, and was of particular interest in view of the previous records of hawfinches in the vicinity. Wild daffodils were growing in the copse and there were good clumps of butcher's-broom.

The visitors were conducted to Swanpond Copse, where they were most interested to see the narrow-leaved lungwort. On the same day the agreement between the County Council and the Society was signed, giving certain rights of access along the track of the disused railway line along the western edge of Swanpond Copse. Plans were made to carry out the necessary coppicing in the Autumn.

After the drought – the deluge! Unfortunately, the arrangements which had been made for coppicing in Swanpond Copse had to be delayed owing to the impossibly wet conditions, and there was no let-up in the weather for the rest of the year.

Together with the Secretary and President, I studied the details of the County Structure Plan, and we made further recommendations on behalf of the Society. As the representative of the Society on the Management Advisory Committee for the Fresh-water Marshes to the South Wight Borough Council, I attended all meetings and made recommendations in the interests of members. The functions of this committee are:

- (i) To prepare reports for submission to the Council on actions which they deem wise to preserve the marshes in their natural state and to advise the Council on how best this can be done.
- (ii) To increase the opportunities for the public to enjoy the marshes and learn more of their natural history.
- (iii) To encourage voluntary help to carry out policies approved by the Council.

After many years of uncertainty as to the fate of the marshes, it is most gratifying to find the Local Authority initiating and involving our Society in this positive act of conservation.

As the Society's representative on the Newtown Local Nature Reserve Management Committee, I have attended all meetings, at which the proposals for the new management plan have been discussed. Detailed information gathered from surveys carried out by members has been provided and the system of voluntary wardening, in which some members have taken part, has worked well and has been much appreciated by the public.

As the Society's representative on the Committee of the Council for the Protection of Rural England, I have attended all their monthly meetings, at which all planning applications are monitored and representations made when appropriate. The Island branch raised funds for the Golden Jubilee Appeal in the interests of future conservation. They also organised an Anti-litter Drive, particularly in coastal areas, in which we took an active part.

In the course of the year I received many telephone calls from members of the public, who were concerned with possible threats to the countryside, and appropriate action was taken.

SURVEY OF NEWTS IN THE ISLE OF WIGHT—1976

By O. H. Frazer

The last investigation into the distribution of newts in the Isle of Wight, carried out in 1965, was fully reported in the *Proceedings* for that year, Vol. V, Part X, pages 454-457. The aim of that survey was to assess the proportional distribution of the three native species of newts in the Island by a simple process of catching and counting numbers of newts in 21 selected ponds distributed throughout the Island. The results seem to indicate that the Palmate Newt was the commonest on the Island, with a wide distribution, which was shared equally by the Smooth Newt, although in lesser numbers, while the Warty Newt was found to be the rarest and apparently confined to the West Wight, although reservations on this last point were expressed.

Subsequent investigations carried out by the writer and others tended to support these findings, except those with regard to the Warty Newt, which was found to occur in such widely separated places as Havenstreet and Niton, so it was felt to be advisable to mount another survey to assess more accurately the precise distribution of newts by recording their presence or absence in as many likely habitats as could be investigated throughout the Island. Thus was conceived the Survey of Newts in 1976, which is now reported.

Method

Since the aims of this survey were clearly different from those in the 1965 investigation, so the method of carrying it out had to be changed. Much thought went into this and, since it was necessary to ensure that every corner of the Island was adequately covered, it seemed appropriate to adopt much the same methods as have already proved so successful in the series of Frog and Toad Surveys previously undertaken. The task of compiling more than 400 Recording Sheets, each containing a 6" map of the appropriate kilometre square, in addition to over 100 Tetrad Recording Sheets, with 2½" maps, for the use of Tetrad Recorders, acting as team leaders, was a considerable one, especially as the writer, who had recently retired, did not have the benefit of his pupils' help on this occasion. It was clear, however, that to carry out the survey the help of schools would be needed, and the response from both High and Middle Schools was generous. Apart from the support of members of the Mammals, Reptiles and Amphibians Section of the Society, the usual appeal was made through the columns of the *Isle of Wight County Press* and also in a special display at the Ventnor Horticultural Show in April and the Society's Local Look Exhibition at Brook during August. From all these sources a surprisingly good number of records were received, although, for reasons beyond our control, which will be explained later, it cannot be assumed that the results obtained are anything like comprehensive and complete, but they do serve a useful purpose as a basis for further investigations in the future.

Results

It was most unfortunate that we should have chosen this particular year of the Great Drought for a survey of newts, since many ponds known to have a good complement of newts in normal years were found with dismay to be absolutely bone dry, with no sign at all of newts or any other form of aquatic life. The effect of this on the survey was, of course, to produce an unusually large number of negative results, which

tend to distort the final figures. The long term effects of the drought, however, are more difficult to assess. From the point of view of breeding under these conditions the year was disastrous, but the adult newts themselves may well have survived and may have been able to travel considerable distances overland to find ponds where some water was still retained. This may very possibly account for some of the new records obtained, although one naturally cannot be sure that the newts would not have been there anyway. It is significant, however, that most of the records which were obtained came from artificial garden pools, in some cases only recently installed, which, owing to their better water-retaining properties, were not so likely to dry up so completely as natural ponds. The importance of these garden ponds has already been stressed in connection with frogs and toads (see *Proceedings* for 1975, Vol. VI, Part X, page 658), and there is no doubt that this largely accounts for the concentration of new records of newts of all three species in the environs of towns, such as Sandown, Shanklin, Ryde and Cowes. An important exception to this, however, is the natural pond at Wydcombe, near Niton, known to contain all three species of newts, which was visited by the writer at the height of the drought and, since it is fed by a reliable spring, was found to be as

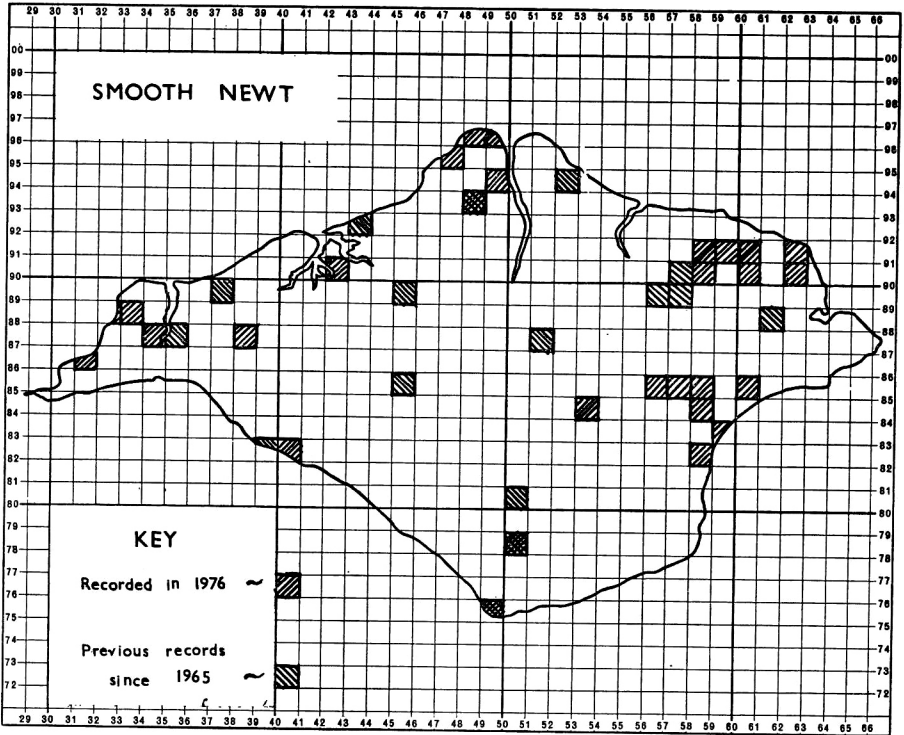
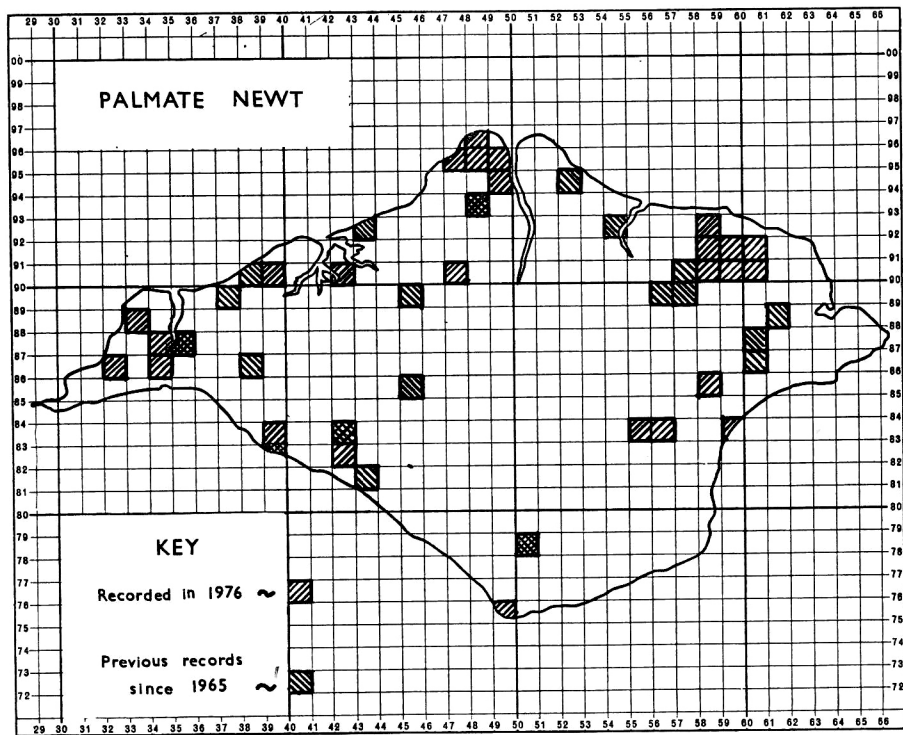


FIG. 1.—Distribution of the Smooth Newt, *Triturus vulgaris*, as recorded in the Isle of Wight, 1965 to 1976 inclusive.

full as ever. Such ponds are of such inestimable value that they ought to have special protection. The results of the survey, together with previous records, including those of the 1965 investigation, are shown in the accompanying maps under each of the three species of newts, and attention is drawn to interesting features in the notes which follow.

SMOOTH NEWT, *Triturus vulgaris*

The distribution for this species is shown in Fig. 1, from which it will be seen that, although always found in smaller numbers than the Palmate Newt, the Smooth Newt has now been recorded in a further 26 kilometre squares, in which it had not previously been recorded, as a result of the 1976 survey. Its presence was also confirmed in another three squares, and the distribution of all the 41 kilometre squares where it has now been found confirms its widespread distribution, being recorded in all except one (SZ 39) of the 10-km squares of the National Grid covering the Island. That it would be found in many more kilometre squares in normal years is certain, and further investigations are needed to discover its true distribution.



Based upon the Ordnance Survey Map with the sanction of the Controller of H.M. Stationery Office. Crown Copyright Reserved.

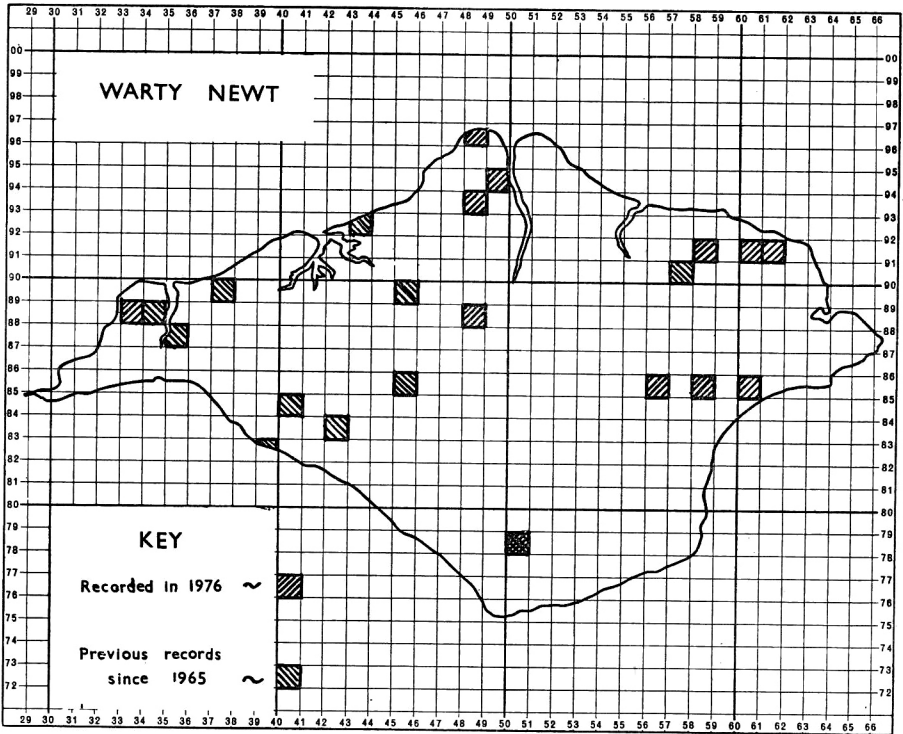
FIG. 2.—Distribution of the Palmate Newt, *Triturus helveticus*, as recorded in the Isle of Wight, 1965 to 1976 inclusive.

PALMATE NEWT, *Triturus helveticus*

The distribution of this species is shown in Fig. 2. By a strange coincidence the Palmate Newt also was recorded in a further 26 kilometre squares, in which it had not previously been recorded. That this was not simply due to enthusiastic recorders investigating 26 new ponds is evident from the fact that in most cases they were found in quite different squares from those in which the Smooth Newt was recorded. Its presence was also confirmed in a further 5 squares and the overall distribution of the 46 kilometre squares, in which this species has now been recorded, shows that it has now been taken from all ten 10-km squares of the National Grid covering the Island, thus supporting the view that it is not only our commonest newt, but also the most widespread.

WARTY NEWT, *Triturus cristatus*

The most heartening result of the 1976 survey was the disclosure of a much wider distribution of this species than was previously assumed (see Fig. 3). It is now known to occur in a further 11 kilometre squares, mostly in the environs of Sandown, Ryde,



Cowes and Newport, and was also confirmed in one other square. The general distribution of the 22 kilometre squares, from which it has now been recorded, shows that, although still the rarest of our newts, it is found in all but two (SZ 39 & 47) of the ten 10-km squares of the National Grid covering the Island. There is a particular difficulty with regard to the accurate recording of this species of newt, as it is not so readily seen or caught, generally preferring ponds with deeper water, and experience from other surveys carried out on the mainland (e.g. in the New Forest) would seem to indicate that the best way of establishing the presence of this species is by shining a torch on a pond at night, when females come to the shallow water for depositing their spawn. This should be borne in mind for future surveys.

General conclusions

Taking the results now obtained since 1965, the overall distribution of newts still presents some interesting features worthy of further investigation. Bearing in mind the many limitations and distortion to the figures obtained by drought conditions, absence of suitable habitats in some squares and inadequate coverage in some areas, not to mention the considerable mobility of the newts themselves, we are beginning to get a clearer picture of the distribution pattern with each successive survey. In assessing the comparative distribution of the species in each of the ten 10-km squares, it is important to realise that these are very uneven in the actual land area represented, varying so far as the Island is concerned from only 4 kilometre squares in SZ 39 to 97 kilometre squares in SZ 58. In the following table, therefore, an attempt has been made to make the results so far obtained more meaningful by summarising them not only in actual numbers of kilometre squares for each species, but also expressed as percentages of the potential land area available in each 10-km square. The chalky Needles headland, which just projects into SZ 28 has been ignored for this purpose, as also have very small fractions of kilometre squares in coastal areas, where these cannot really be accurately pin-pointed on the ground.

TABLE

Records of newt species

10-km squares	No. of km ² land area	All species		Smooth Newt		Palmate Newt		Warty Newt	
		km ²	%	km ²	%	km ²	%	km ²	%
SZ 38	50	13	26	7	14	9	18	5	10
SZ 39	4	2	50	0	0	2	50	0	0
SZ 47	17	1	5.9	1	5.9	1	5.9	0	0
SZ 48	96	8	8.3	3	3.1	5	5.2	5	5.2
SZ 49	45	10	22.2	7	15.6	9	20	4	8.9
SZ 57	34	1	2.9	1	2.9	1	2.9	1	2.9
SZ 58	97	13	13.4	11	11.3	6	6.2	2	2.1
SZ 59	49	8	16.3	5	10.2	8	16.3	2	4.1
SZ 68	27	4	14.8	2	7.4	3	11.1	1	3.7
SZ 69	10	5	50	4	40	2	20	2	20
Totals	429	65	15.2	41	9.6	46	10.7	22	5.1

It may well be thought that the figure of 65 kilometre squares, in which newts have been found, out of a total of 429 potential squares in the Island, is low, but, in fact, this is not far below the average number of squares in which frog spawn has been found

in the series of Frog and Toad Surveys, already referred to – 70 in 1966, 72 in 1968, 75 in 1970, although the total of 95 in 1975 was outstanding, as this was a particularly good year for amphibians with plenty of water about. Undoubtedly many more squares yielding newts will be found in due course, but it is doubtful if, even with the greatest care in the world, the total is likely to exceed 100 or so. What is significant is that of these 65 kilometre squares in which newts of any kind have been recorded, the Smooth Newt has been found in about two-thirds of them (63%), the Palmate Newt in slightly more (70%) and the Warty Newt in less than half that number (29.3%), thus supporting the general observation on the relative distribution of the three species, as already given. As one would expect, these same proportions are generally to be found in the figures for each species in the individual 10-km squares, with the notable exception of SZ 48, where the incidence of the Warty Newt equals that of the Palmate Newt and exceeds that of the Smooth Newt. This clearly calls for further investigation. It is interesting to note also that in SZ 58 the relative incidence of the Common and Palmate Newts seems to be the reverse of the general trend, and this too warrants further investigation. The figures also tend to be distorted in those 10-km squares with small land areas, SZ 39 & 69. In the former, in particular, the recording of Palmate Newts in two widely separated ponds represents 50% of the land area, whereas, if the same were found in SZ 48 this would represent only 2.1% of the land area. One can juggle with the figures almost interminably, but perhaps someone can suggest a way of presenting them in a more meaningful way. One thing is quite clear, however, and that is that SZ 47 & 57, comprising the southern part of the Island from Atherfield in the West to Luccombe in the East, and extending up to a line from Chale to Wroxall, is very seriously under-recorded, and this will be given top priority when planning future work by the Section.

Much has been said and written on the possible effects of the drought on wildlife in general and amphibians in particular. Two of these, in so far as they may have affected the results of the survey, have already been mentioned. There is another indirect result of the drought, however, which generally seems to have been overlooked, and which may have the most profound effect for the future. Owing to the desperate shortage of water, many farmers and landowners have gone to great lengths to ensure that they do not get caught again, and have consequently excavated large ponds and reservoirs, which in course of time may well provide on a wider scale than ever before those habitats which are so essential to the well-being of amphibians and other aquatic life, thus leading to a considerable increase in their numbers and distribution. The surveying and recording of such changes for the better will be a pleasurable undertaking.

Acknowledgments

My thanks are due to the teachers and pupils of the following schools, who gave considerable help with the survey:

High Schools: Carisbrooke, Cowes, Ryde and Sandown.

Middle Schools: Archbishop King, Bishop Lovett, Lake, Mayfield, Newport C. of E., Nodehill, Osborne, Sandham, Solent, Somerton and West Wight.

My thanks are also due to members of the Mammals, Reptiles and Amphibians Section of the Society, correspondents through the Isle of Wight County Press and visitors to the Ventnor Horticultural Show and Local Look Exhibition at Brook.

NOTES ON THE LICHENS OF THE ISLE OF WIGHT

By C. R. Pope

Apart from a few scattered records in various journals, there has been nothing published on the Island's lichen flora for over 40 years. It is hoped that this account will help to bring the picture up to date. Illustrations of many of the species mentioned can be found in two readily available works, the Oxford Book of Flowerless Plants by F. Brightman and the Observer's book of Lichens by K. Alvin (2nd edition).

Lichenology was a pastime of the well-to-do and leisured during the Victorian era. A list of lichenologists who have visited the Island in the past reads like a clerical register. Those who contributed most to our knowledge of lichens were Rev. J. Bloom, Rev. A. Bloxam, Rev. J. Crombie, Rev. T. Salwey, Rev. H. Livens and Dr. H. Hall. The herbaria of these gentlemen are deposited in various provincial museums throughout the country and some in the British Museum. During this century, H. Knights' list of 1933 has been the only publication referring specifically to the Island's lichen flora. However, as a result of lichenological activities since 1971, the present situation is beginning to be understood. Approximately 270 different lichens have been recorded since 1970, largely as a result of visits made to the Island in 1971 by B. Coppins, F. Rose and H. Pentecost. According to Bowen (1976) the Island has more species per unit area than any other county south of the Thames and therefore probably more than any other English county on a unit area basis.

Situated midway along the South Coast, the Island shares the floras of both the southeast and southwest of the country. Lichens with a western distribution such as *Rocella phycopsis*, *Squamarina crassa* and two beard lichens, *Usnea articulata* and *U. flammea*, reach the eastern-most limits of their range here whilst others with a predominantly eastern distribution such as *Anaptychia ciliaris*, *Caloplaca teicholyta* and *Parmelia soledians* also occur. Two lichens occurring here on trees, *Gyalectina carneolutea* and *Phycia tribacioides*, show an extreme southern distribution in this country being almost confined to a few sites along the South Coast.

Lichens occupy a wide range of habitats but whilst some occur on a variety of substrates, most tend to be fairly exacting in their requirements. Rocks are an important substrate for many lichens but on the Island suitable rock outcrops are scarce; the chalk erodes too rapidly to allow much colonisation. Because of this, the area of rock provided by old buildings, in particular those of churches and churchyards, are of major importance for these species. Many of the Medieval church towers in the south of the Island (e.g. Chale) carry a conspicuous, shaggy, grey-green cover of the maritime *Ramalina siliquosa*, and *Arthonia dorina* can occur as an extensive mauve crust on the walls (e.g. Whitwell). Most of the old churches are good although perhaps the best site is Godshill churchyard which has a rich lichen flora including many interesting species. It was here in 1860 that the rare and distinctive *Rocella phycopsis* was first recorded by a Mr. More of Bembridge "in the greatest abundance all over the north side and tower of the church" (Salwey, 1860) and his description is happily still apt today. This species also occurs in small quantity on the two St. Helens' churches but is at the edge of its range here on the Island. The main threat to these saxicolous (stone-growing) communities is in cleaning up operations on churchyards, walls and buildings and the re-siting of headstones.

The stonewalls and rocks at St. Catherine's Point carry an interesting saxicolous flora and one large, southfacing rock supports a good and colourful example of a maritime lichen community rarely seen here including *Anaptychia fusca*, *Lecanora atra*, *Ochrolechia parella*, *Ramalina siliquosa* and *Xanthoria parietina* var. *ectanea*. These lichens never form a conspicuous zone of the shoreline vegetation as they do along the Atlantic coast of Britain, presumably because the rocks are unsuitable. There are no recent records of the maritime lichens which occur between the tidemarks, probably because they have not been looked for. *Verrucaria maura* still grows on the shore at Steephill where there is also an old record for *Lichina pygmaea* and it is likely that these and other species occur elsewhere.

Agricultural soils are virtually devoid of lichens, but residual grassland slopes which have been left unploughed for long periods, such as chalk downland, can be interesting. These shallow calcareous soils may support *Cladonia furcata* spp. *subrangiformis*, *Cladonia pocillum* and the gelatinous *Collema tenax*. In 1976, Dr. O. Gilbert visited Tennyson Down and found an important area of ancient chalk grassland with a rich variety of terricolous (ground growing) species close to the edge of the cliff. *Dermatocarpon hepaticum*, *Fulgensia fulgens*, *Squamarina crassa*, *Toninia coeruleonigricans* and *T. lobulata* were frequent. This is a small site but one of national importance being an example of a specialised community whose survival is dependent upon continuous and heavy grazing by rabbits to maintain an open, nutrient-poor community structure (Wells *et al*, 1976). The general decline in rabbit numbers since the 1950's and the reduction in the practice of grazing sheep on the downs has, of course, led to a progressive loss in the richness of our downland flora generally.

Acid soils are rather scarce on the Island and heathland is largely restricted to plateau gravels. Limited patches of mor (acid humus) soil occur as cappings to some of the chalk downs such as St. Boniface, and where this occurs lichens are a conspicuous feature of the *Calluna* heath. *Rhizocarpon obscuratum* var. *reductum* grows on the pebbles; *Lecidea granulosa* and *L. uliginosa* occur on the bare peat; *Cornicularia aculeata* and many *Cladonia* species including *C. impexa*, *C. uncialis* and the red cup lichen *C. coccifera* grow amongst the heather. This community is best developed at Headon Warren where permeable gravels overlie basic Barton clays and the resultant springs and seepages undermine the gravels which slip en masse over the well-lubricated clays. The mixing of basic and acidic substrates means that calcicoles such as *Collema auriculatum*, *Dermatocarpon hepaticum* and *Peltigera rufescens* occur in close proximity to calcifuge species. Interesting lichens which I recorded in 1976 from here included *Baeomyces rufus*, *Usnea flammea* and a host of *Cladonia* species (*C. crispata*, *C. glauca*, *C. subulata*, *C. tenuis*, *C. verticillata*, etc.). Headon Warren is an important fragment of lowland heath, possibly the most rapidly disappearing semi-natural habitat in this country, and its characteristic lichens are sensitive to both burning and trampling.

The trunks and branches of trees are major lichen habitats and the communities occurring vary with the tree species, their position on the tree and the site of the tree. The oldest trees in parkland, fields, meadows and hedgerows are usually the richest in lichens. A number of species appear to be restricted to sites of ancient woodland where timber extraction in the past has been in the form of selective felling so that a continuity of trees of mixed ages has been maintained (Rose and James, 1974). The outstanding example of relatively intact, ancient woodland is found in the old Enclosures of the New Forest. On the Island, the woods have largely been maintained as

coppice and the virtual clear felling which this entailed, whilst encouraging an interesting flowering plant community has removed any "old forest" lichens. Most of the timber was used to supply the shipyards of Cowes, Portsmouth and Southampton. As long ago as 1794, there were fears that the wholesale felling of timber with no regard for replanting would leave the Island bare of timber trees! Referring to Parkhurst Forest in 1794, Warner says, "This tract of land, which contains 3000 acres, is situated to the north of Newport and Carisbrooke; and although called a forest, has long been without a tree of any value; there is, however, a lodge still kept up, and a keeper appointed, whose office it is to preserve the deer and the wood, of which scarce a vestige remains". However, a few vestiges of old woodland must have remained on the Island for lichenologists in the last century were able to find a variety of "old forest" lichens at one or two sites. The Park and wood at Appuldurcombe were evidently good sites for woodland lichens for in 1860, Rev. A. Bloxam recorded several *Lobaria* and *Sticta* species together with other old forest species and the golden *Teleschistes flavicans* which he found to be "very fine" on the trees. This area still has a rich lichen flora but when visited by Coppins and Rose in 1971 it was found that the bulk of the old trees which must have carried these species had been felled and only species characteristic of nutrient-enriched bark were found. The similar apparent lack of old forest lichens from Quarr Woods, another old site, may be due to a combination of building activities over part of the wood and the slight increase in atmospheric pollution in that area. Borthwood Copse retains an interesting lichen flora but no old forest indicators. In 1976, I visited the eastern part of Mudless Copse near Swainston, and found it to be an excellent wood for lichens. Four beard lichens (*Usnea* species), including *U. articulata*, were recorded and there were a few old forest lichens. Most interesting was the tree lungwort, *Lobaria pulmonaria*, growing on three old ash trees at the edge of the wood together with *Dimerella lutea*, *Normandina pulchella*, *Collema furfuraceum* and others. In December of that year, I found *L. pulmonaria* at a second site on an old ash tree at the edge of Cowpitt Cliff Wood, Shanklin, a wood which also yielded *Dimerella lutea* and *Usnea articulata*. It may be that some other old forest lichens such as *Lobaria laetivirens* and *Sticta limbata*, which were recorded in the last century, still persist on a few old trees somewhere on the Island. Favoured trees appear to be isolated large ash trees at the foot of wooded slopes and the most likely areas would seem to be around Shanklin and Apes Down. These relict lichen communities are unable to spread to surrounding trees and their continued survival is dependant upon the trees on which they are growing not being felled or underplanted.

Although the lichen flora of many sites, particularly in the East Wight, is known, many areas have not been investigated and the number of species remaining to be discovered may be large. Amongst these might possibly be some striking ones. *Pseudocyphellaria aurata* is known today only from the Scillies and Channel Isles but was recorded last century from Ryde, Shanklin and Ventnor. It is a conspicuous foliose species with bright yellow margins but when Rev. A. Bloxam discovered it in a wood south of Shanklin it was noticed only on fallen trees. "It grew on the higher portions of the trees, consequently in those which are standing it would be difficult to see from its elevation" (Venables *et al*, 1860). *Tornabenia atlantica* occurred on coastal sandstone cliffs at Hastings and in the Selsey Bill area but is believed to have been exterminated as a result of overcollecting. It is just possible that it may still occur elsewhere on the South Coast, perhaps on the Island. The loss of lichens is most likely to result from removal or destruction of the substrates on which they are growing or from

eutrophication (over-enrichment) of tree bark as a result of intensive farming practices rather than from increasing air pollution.

Most interesting communities of lichens tend to be characteristic of relatively undisturbed habitats which are frequently also interesting for the rich variety of other plants and animals found there. Lichens have been shown to be sensitive indicators of certain environmental changes and it is important to consider them together with other wildlife assets in an area. They give character to the trees and stone in the landscape which is lacking in large areas of England where levels of air pollution have led to the replacement of multi-coloured mosaics of lichens by a uniform green cover. It is to be hoped that the Island will long remain a favourable locality for lichens.

Footnote. An interesting description by Englefield (1816) in his "Picturesque Beauties, Antiquities and Geological Phenomena of the Isle of Wight" provides evidence for the former more luxuriant growth of lichens still frequent today, but growing with reduced vigour. He describes how large trees exposed to the sea "are so entirely invested with a long fleecy grey moss to the very summits of their smallest branches, that scarcely a leaf can be seen". He goes on to say "Some of the woods at Appuldurcombe are extremely covered by this moss but at Billingham, there is a grove so singularly enveloped by it, as to form a spectacle which, at first sight, is scarcely to be understood".

Acknowledgements

I am most grateful to Dr. Francis Rose (King's College, London), Mr. Brian Coppins (Royal Botanic Gardens, Edinburgh) and Dr. Oliver Gilbert (Sheffield University) for their observations of lichens on the Isle of Wight.

References

- BOWEN, H. (1976). The lichen flora of Dorset. *Lichenologist* 8: 9-34.
- KNIGHT, H. (1932). The lichens of the Isle of Wight. *Proc. Nat. Hist. Archaeol. Soc.* 2: 221-232.
- ROSE, F. and JAMES, P. (1974). Regional studies on the British lichen flora. The corticolous and lignicolous species of the New Forest, Hampshire. *Lichenologist* 6: 1-72.
- SALWEY, T. (1860). *Rocella tinctoria* and *R. phycopsis* in the Isle of Wight. *Phytologist* n.s. 4: 267-268.
- VENABLES, E. *et al* (1860). *The Isle of Wight*. London.
- WARNER, Rev. (1794). *General view of the agriculture of the Isle of Wight with observations on the means of its improvement*. London.
- WELLS, T. C., SHAEIL, J., BALL, D. F. and WARD, L. K. (1976). Ecological studies on the Porton Ranges: relationships between vegetation, soils and land use history. *J. Ecol.* 64: 589-626.

SPIRAL ROTATION IN THE LARVA OF *PIERIS BRASSICAE* L.

By R. L. E. Ford

Spiral rotation in lepidopterous larvae occurs but rarely. The late Dr. E. A. Cockayne made a study of this occurrence.

I recently found a fully grown larva of *Pieris brassicae* L. (FIG. 1) in my garden afflicted by this rotation. The larva could not walk on a smooth surface except with great difficulty, since, if its front legs gripped, the pro-legs were then at a right angle to these and were in the air. On a rough leaf however, it could find enough surface differences to get some sort of a grip with front and back legs.

The line formed by the spiral affected the positions of the pro-legs, the left front pro-leg being out on its own, while the right one joined in a triangle with the next pair (FIG. 2).

FIG. 1.—Sketch of the larva.

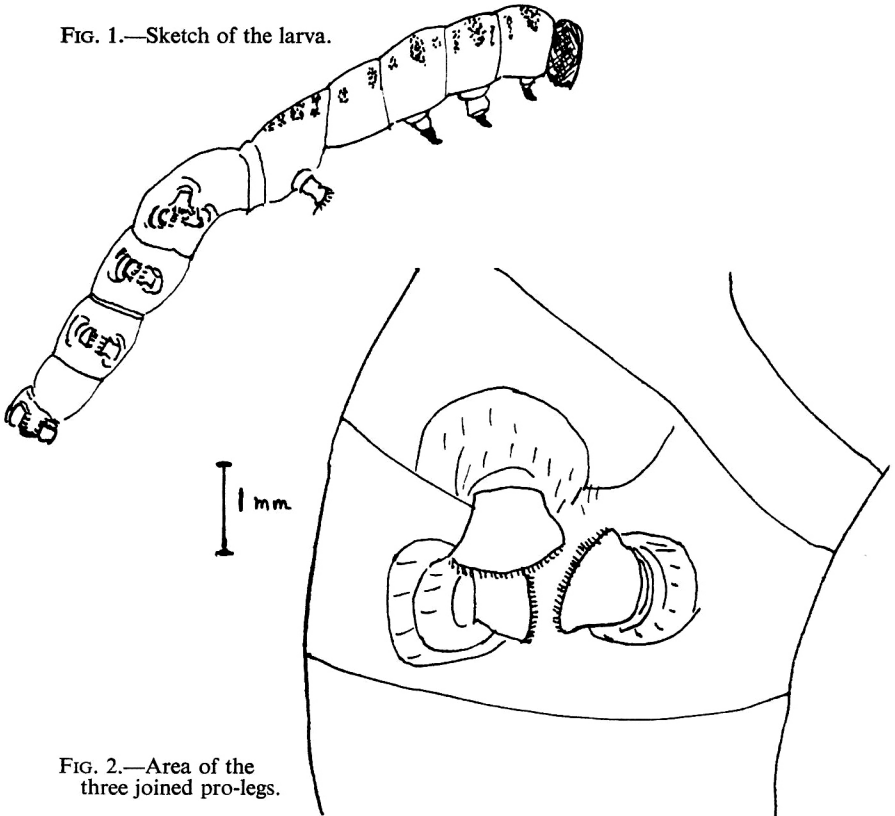


FIG. 2.—Area of the
three joined pro-legs.

The damage causing this was thought by Cockayne to take place in the gene stage. I preserved this larva (blown) and it will end in the National Collection. Probably it would have emerged safely, as the wing area did not appear to be affected. In a similar larva of *Sphinx ligustri* I found, I bred out the adult. The cast skin, the pupa case and the set adult are in the Cockayne collection (B.M.N.H.). The adult looked normal, except for one segment on the abdomen rotated right round, showing the underside markings on the top.

References

- COCKAYNE, E. A., Spiral and other anomalous forms of segmentation, 1929, *Trans. Ent. Soc. Lond.*: 177-184, 3 pls.
- FORD, R. L. E., Mutation in the carapace of the fossil turtle *Emys* from the Hamstead Beds (Oligocene) *Proc. I.O.W. Nat. Hist. Soc.*, 1974, VI, 610-611.
- YONGE, C. M., Giant Clams, *Scientific American*, 232, No. 4, p. 96-105.

ANDRICUS QUERCUS-CALICIS—A NEW GALL ON THE ISLAND

By D. T. Biggs

Some plant galls are arresting objects and easily identifiable, such as the witches-brooms on silver birch, oak apples and marble galls on oak and the dramatic robin's pincushion on some wild roses.

My daughter Victoria, then aged five, found a new gall in August 1976. Whilst walking along the disused railway line between Lower St. Cross and Newport on the west bank of the Medina River, she drew my attention to several bright green objects, which she had noticed growing on oaks (*Quercus robur*) beside the track. They were new to her and unknown to me.

Each gall was roughly pyramidal in shape, about 2 cm. from base to apex and very bright green (see figure). The faces of the pyramid were somewhat concave, and between the faces were irregular, raised and roughened, brownish buttresses. The whole surface was covered with a sticky secretion, and the single aperture was at the apex. The gall resulted from distortion of the acorn itself and there were never more than two arising from each acorn stalk. There were about a dozen galls on each of about a dozen trees along a one mile stretch of railway line. Each gall contained a single gal-wasp larva.

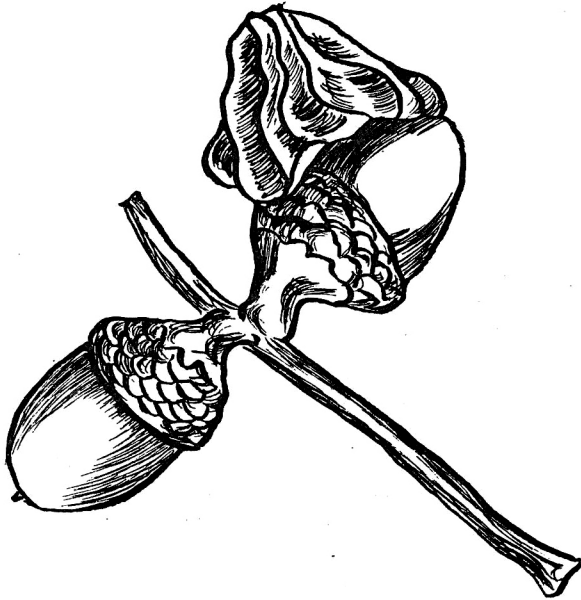


FIG 1.—Acorn Gall caused by the gall wasp, *Andricus quercus-calicis*.

The gall was kindly identified by Mr. O. Frazer as being caused by the gallwasp *Andricus quercus-calicis*, and not previously recorded on the Island. It is called the "Knopper" gall on the Continent, but it has been suggested that it could well be called the Acorn gall.

It was first taken in Great Britain in 1962 by Dr. M. F. Claridge, originally establishing itself in Devon, having invaded from the Continent evidently via the Channel Islands. Since then there have been numerous reports from other parts of Southern England notably from the Channel Coast as far north as a line from Plymouth to the Wash, which perhaps suggests distribution by the wind.

Plant galls are the result of parasitic attack by other organisms. They are formed of plant tissue by specific chemical irritants, which are produced by the parasite, and which stimulate the plant cells to excessive growth. The stimulus differs among the various causers, but of insect causers the stimulus is usually a substance secreted by the digestive glands of the feeding larva and not usually by the physical act of oviposition. Some of these substances appear to be quite similar chemically and physiologically to the growth-regulating hormones normally found in plants. The morphological form of a gall depends upon the species of the causer.

The parasite may be a Virus, a Bacterium, a Fungus or a Slime-Mould, but most plant galls are caused by Insects, of the Orders *Coleoptera*, *Lepidoptera*, *Hemiptera*, *Thysanoptera*, *Diptera* and especially *Hymenoptera*. Nematodes and Acari are sometimes gall-causers.

Galls often contain whole communities of animals and not just the causer. The larva or pupa of a Cynipid wasp can be parasitised by Chalcid wasps. These Chalcid wasp parasites can in turn be attacked by Ichneumons as hyper-parasites. Inquilines, such as mites and beetles, may live within galls as commensals with the causer, and the gall can be invaded and colonised by successori after or before the causer has emerged.

The gall-wasp *Andricus quercus-calicis* belongs to the family CYNIPIDAE of the order *Hymenoptera*. It belongs to the same genus as the causers of the marble gall (*A. kollari*) and the artichoke gall (*A. fecundator*), but, unlike these two galls, it seems only ever to contain a single causer and no parasites or inquilines.

Many Cynipid wasps undergo an alternation of generations. One generation is wholly female and the alternate generation has both male and female individuals. This second generation produces fertilised eggs from which only females emerge which in turn lay eggs parthenogenetically. It is from these the bisexual generation arises.

Oak Cynipids often produce two different galls from these two different generations and *A. quercus-calicis* and *A. kollari* on the Continent of Europe alternate between *Q. robur* and *Q. cerris*, but appear to be known in this country entirely by their agamic galls (caused by the wholly female generation). Galls of the bisexual generation of *A. quercus-calicis* develop on the male catkins of *Q. cerris* in Europe, but attempts to induce colonisation of Turkey Oak by sleeving the agamic females on to *Q. cerris* catkins have apparently yielded nothing so far in this country.

It will be interesting to see how long *Andricus quercus-calicis* survives in England without exchange of genetic material.

DIPTEROUS PARASITES OF LADYBIRDS

By R. L. E. Ford

The hot summer of 1976 produced a great quantity of the ladybird *Coccinella septempunctata* L. commonly called the seven-spot ladybird.

Large migrations in the spring soon multiplied as the warmth increased not only their breeding rate, but that of the various aphids on which they fed.

I collected a number of fully grown larvae and also puparia from the area around the View Point Car Park, which is on the Bouldnor Road out of Yarmouth. This collection was made at the end of June and, within a few days, I saw a number of dipterous larvae crawling from the puparia and these pupated and emerged in a week.

The pupae look like those of Phoridae often associated with dead organic matter so I took some trouble to verify that the puparia were in fact alive when attacked.

The female diptera lay a single egg on the ladybird puparia and, as is generally the case with parasitic diptera, the larva hatches from the side nearest the host body which it enters. The empty egg serves as a cap to stop bleeding.

I sent a series of these flies to the British Museum, where they were kindly identified by K. G. V. Smith, who stated that they were *Phalacrotophora fasciata* Fallen, "well known as a true parasite of ladybirds, but not too frequently met with."

There is also a second species, rather more common. This is *P. berolinesis*, and both species attack Coccinellids, I thought *P. fasciata* might have been a new record for the Island, but Curtis recorded the species (under another name). He was a fine field worker, but went to Australia and took his collection with him and the specimens are still available. Curtis described them in 1833 from the Isle of Wight and Dorset!

Of the puparia I collected, ten out of every twelve were parasitised, which is pretty severe and in a short time the seven-spot ladybird vanished from the area although there was still ample food and it still flourished not very far away.

The two species of diptera are easily distinguished in pupal stage when *P. fasciata* has pronounced prothoracic horns visible with a good hand lens. The other species does not have these. They are excellently illustrated by Colyer in his paper on the group.

The recent specimens from the Isle of Wight have been added to the National Collection.

References

- COLYER, C. N. (1952), Notes on the life-histories of the British species of *Phalacrotophora* Enderlein (Dipt., Phoridae), *Ent.mon.Mag.*, 88: 135-9.
- COLYER, C. N. (1954), Further notes on the life-histories of the British species of *Phalacrotophora* Enderlein (Dipt. Phoridae) *Ent.mon.Mag.* (1954), 90: 208-210.
- CURTIS, J. (1833), *British entomology*, 8: 437, 2, 25a, London.

NEWTOWN SURVEY REPORT 1976

By L. E. L. Cox

In this, the eighteenth consecutive annual Survey held at Newtown from 29th May to 13th June, 1976, inclusive, the following took part:

Adults—Mr. O. Frazer, Mr. P. Cotton, Miss D. Mattin, Mrs. L. Gaskin, Mrs. Palaeologus, Mrs. M. Cox, Mr. and Mrs. Wendes, Mr. P. Gandy, Mr. A. Groves, Mr. A. Mills, Miss S. Mills, Miss Z. Palaeologus.

Students—Christopher Lock, Carole Smith, Gwen Cooper, Pauline Ford, David Steele, Peter Miller, Oscar Michalski, Jonathan Cox, Andrew Billowes, Robert Aitken, Ian Pocock, Nicholas Palaeologus, Helen Palaeologus, Janet Shaw, Sally Chequer, Marianne Wallace, Shereleagh East, Nicholas Cox.

Visitors—Mr. N. Davis, Mr. J. Cheverton, Mr. W. Winder (Headmaster, Cowes High School).

In addition a few genuinely interested visitors from moored boats were taken on a conducted tour and shown work in progress.

Study Groups

- | | | |
|---|------------------|--------------|
| 1. Bird watching | 5. Plaster casts | 9. Fish |
| 2. Mammals | 6. Photography | 10. Molluscs |
| 3. Ecology: sea shore,
marsh, meadow | 7. Moths | 11. Ants |
| 4. Fossil hunting | 8. Butterflies | 12. Erosion |

The fortnight was blessed with fine weather, a pre-requisite for the success of a camping survey team. Some cold winds and a little rain was experienced but nothing sufficient to disrupt the daily routine that soon became established.

The Survey group was a well balanced mixture of students, young and older adults. The age range encompassing Nicholas at ten years to the doyen of the team, Oliver Frazer.

The first of the two weeks was particularly well supported by members of the Society. Their experience gained from past visits helped in establishing the camp quickly and efficiently on Saturday, May 29th. Their enthusiasm, ready co-operation and initiative was greatly appreciated and made my first week as organiser, both pleasant and rewarding.

Paul Cotton established survey work on the reefs and completed fifty quadrats in conjunction with Christopher Lock.

Andrew Mills with his sister Susan, assisted by Pauline and Carole, were involved in fossil hunting with subsequent cleaning and identification of specimens. It remains to be seen if the scattergram that Andrew used has proved effective in giving some idea of the number of skeletons buried on the reef.

Conny Wendes and her husband were soon at work finding sites for the mammal traps and instructing Janet and Sally in their use, in addition to correct handling methods and accurate recording.

Janet and Sally branched out into an absorbing study of the butterflies that were plentiful this year. Their field note book is evidence of the interest and enjoyment

they got out of their study.

Mrs. Palaeologous was involved with her daughter Helen in artistic pursuits. Identifying and painting wild flowers of the varying habitats. The inspiration derived from Newtown is again evident in the fact that Mrs. Palaeologous has attended art classes this winter in order to improve her technique for future years. Success is to be seen in the exhibition.

Nicholas Palaeologus was again involved in his moth survey. The moth trap proving more successful this year as we were able to connect to a 12v. battery, consequently the light did not fade out after a couple of sessions. The catches varying with habitats in quite a small area are strikingly noticeable from Nick's records.

Peter Gandy was responsible for setting and placing the hides. He was ably supported by a new member, Alan Groves. They were both untiring in their efforts and enthusiasm.

The hides were placed according to the availability of nesting sites, which proved of wide interest and enabled birds of differing habitats and adaption to be observed. Peter's photographs and notes bear witness to this.

Jonathan Cox was assiduous in his photography and in particular of the birds of the meadow. His work on the "white throat" will be worth following up in succeeding years.

Mrs. Gaskin was again concerned with her study of *Zostera*, a study that is gaining in erudition and widening to other Island beaches. It is perhaps a mark of the survey that contacts established in Camp have led to further interests and the acquisition of further information. Mrs. Gaskin and Chris Lock were able to team up and transfer their studies to the Wootton area after the camp. Chris reported this week (11.11.76) that he has identified a new bed of *Z. nana* and *Z. marina* at Wootton.

Pupils who visited Newtown for the first time were able to sample various aspects of Natural History. Some developed very definite interests, whilst one or two may at least know that the Natural History programmes they avidly watch on T.V. are only produced as the result of dedicated, tedious, hard work in uncomfortable and difficult circumstances.

The second week was predominantly for the pupils. They were able to continue with the studies previously started and to pursue their own interests. In particular a transect of the beach was made by Andrew, Oscar, David and Peter, under the direction of Miss Mattin. The fruits of their labours are evident in the transect display that has been collated and drawn by Andrew.

Robert Aitken and Ian Pocock elected to start a survey of the fish of Newtown. Unfortunately the fish were not too co-operative and their studies floundered. However, they carried out valuable work in the hides and contributed to the smooth running of the camp.

Marianne and Shereleagh continued with the mammal trapping after Sally and Janet had left. Marianne is to be congratulated on the work she has prepared after her first visit to Newtown.

The assembly of display materials has been completed by Andrew, Peter, David and Jonathan. The film was edited by Oscar and slides arranged by Jonathan.

I am indebted to Paul Cotton, Di Mattin and Mrs. Gaskin for their assistance in supervising aspects of the survey and in particular to Oliver for his help and encouragement.

My thanks also to Pat Ewbank who was helpful in innumerable ways, he was always available when needed, willing to help and contribute his expertise.

Bert Long saw to the transport of our stores and equipment in his usual quiet and helpful way.

Perhaps the only jarring note is introduced by those adults who seek to gratify their own petty egos by deliberately breaking the bye-laws by wandering through the Reserve without consultation and permission from the Warden. Their conduct can be equated with that of a group of youths who sought to disturb the camp late on the last night.

Special thanks are due to:

The I.W.C.C. Education Department for the provision of camping facilities.

The Warden for equipment and books.

Cowes High School for scientific equipment and books.

Last, but not least, to all members of the Survey Team for their co-operation and enthusiasm.

LOCAL LOOK REPORT FOR 1976

By Mrs. K. Wadham

As May 1976 was chosen for the launching of the European Wetlands Campaign, it was decided to make "Wetlands" the theme for this, the sixteenth Local Look Exhibition. In view of the severe drought at the time, some might have thought this was inappropriate, but in fact it only served to stress the importance of conserving our water supplies and precious wetlands.

A special feature was a cut-out model of a pond, which was produced as part of the campaign, and the various displays round the hall showed many features relating to the wetlands from the animals which roamed the marshlands in geological times to the plants, birds and other animals to be found in wet habitats in the Island today. A particular source of interest was the aquarium with live 12-spined sticklebacks, and the smaller aquaria showing many kinds of pond life, also alive.

Although, due to the hot weather, the number of visitors at 6,644 was some 200 down on last year, the takings were up, due partly to an increase in charges and sales of goods which members had kindly supplied at a discount for resale.

METEOROLOGICAL REPORT FOR 1976

By H. Hoare

This summary was compiled by Mr. H. Hoare, Meteorological Officer for Shanklin. The Maximum, Minimum, Wet and Dry Bulb Thermometers and the Rain Gauge are situated in Big Meade, Church Road, Shanklin, and are 180 ft. above sea level. The Sunshine Recorder and the Weather Vane are on the roof of the Town Hall. All the instruments in use have been supplied by the Meteorological Office and are tested periodically.

Readings are taken at 0900 hours and at 1800 hours daily, G.M.T.

Summary of Weather Month by Month

JANUARY

Following a dry 1975, January set the pattern for a sequence of dry months that was to become serious. The rainfall total of 14.9 mm, compared with the average rainfall of 96 mm, was the lowest for any January ever recorded. It was a very warm month with normal sunshine.

FEBRUARY

With normal temperature, but less than half the average sunshine, there was again a low rainfall of 43.9 mm, compared with the average of 61.0 mm.

MARCH

This was a cold, windy month with seven frost recordings, but once again very dry with rainfall at 18.3 mm, compared with the average of 65.8 mm.

APRIL

This was a sunny month with normal temperatures, but again with very little rain at 7.3 mm (average 52.6 mm), the lowest for 20 years. Water levels were beginning to get very serious indeed.

MAY—AUGUST

Then followed the long, hot, dry summer with temperatures sometimes in the nineties. Use of hoses was banned and in many parts of the country water had to be rationed. Despite these drought conditions, with cracks appearing in the parched earth, there was a record crop of really juicy blackberries and sloes.

SEPTEMBER

At long last, after what had seemed an eternity, the rains came with a welcome total of 151 mm, the highest since 1960.

OCTOBER

In this month conditions were similar to those of September, with a total rainfall of 201.9 mm, which once again was the highest since 1960.

NOVEMBER—DECEMBER

Thus ended a most abnormal year as far as weather was concerned, with two months of normal weather with average sunshine, temperatures and rainfall.

The following records obtained during this year of 1976 are worth noting:

The driest January on record.

The driest June on record.

The driest May on record.

The sunniest July since 1959.

The driest Spring on record.

The driest August on record.

The driest May-August on record.

The wettest September for 17 years.

The wettest October for 17 years.

WEATHER SUMMARY CHART FOR 1976

	Sun Hours	Rain mm.	Screen Temperatures		Extremes		Mean Temp. °C	Snow Records	Thunder Records
			Max. Mean °C	Min. Mean °C	From °C	To °C			
January	65.1	14.9	8.1	4.1	11.4	-2.0	6.1	2	—
February	40.9	43.9	7.0	2.9	11.1	-1.4	4.5	1	—
March	157.7	18.3	8.0	2.2	11.6	-4.7	5.1	—	—
April	241.1	7.3	12.1	11.2	16.9	-1.5	7.9	—	—
May	290.7	15.0	15.4	8.3	24.0	1.2	11.7	—	—
June	302.8	6.6	21.1	12.5	32.5	7.5	16.8	—	—
July	328.2	12.2	23.0	14.2	30.7	9.4	18.6	—	2
August	330.9	11.5	22.9	13.0	28.2	8.8	17.9	—	—
September	151.1	151.1	17.3	10.7	21.7	5.7	14.0	—	—
October	74.5	201.9	14.1	9.5	17.7	4.0	11.8	—	1
November	72.2	159.2	10.1	4.8	12.9	-0.5	7.4	—	—
December	67.7	109.2	6.3	1.2	10.1	-5.6	3.7	1	2
Totals	2122.9	751.1						4	5

This is the last Meteorological Report we can expect from Mr. Hoare, since, following an unfortunate fall on the roof of the Town Hall, while taking his daily readings, he has been forced to retire. We would like to take this opportunity of thanking him for his regular contributions to our *Proceedings* on the Weather at Shanklin, which he has maintained for twenty years, since his first report appeared in 1957, and wish him a long and happy retirement.—EDITOR.

NATURAL HISTORY AND ARCHAEOLOGICAL NOTES FOR 1976

Parasites on Birds. During the last fifteen years 14 dead birds have been sent to the Ministry of Agriculture, Fisheries and Food Veterinary Laboratory at Lasswade for autopsy. Only two have been reported as carriers of parasites: a song thrush, found in February, 1962, and a blackbird, found in June, 1963, each being host to *Philopterus turdi*, a louse of the order Mallophaga and Family Philopteridae.

J. M. CHEVERTON

Dormouse at Shorwell. In 1976 my sons found a nest of a dormouse about four feet from the ground in foliage at the base of a lime tree outside our cottage on the Green at Shorwell.

DAVID HIDE

Smalleyed Ray at Blackgang. A new British national record was set by a Smalleyed Ray weighing 12lb. 10oz. caught by Terry Bradley off Blackgang Beach.

I.W. COUNTY PRESS, 26/6/76

Some sightings of Insects during 1976:

23rd May at Corfheath: dragonfly, *Libellula quadrimaculata*.

6th June at Corfheath: butterfly, Heath Fritillary.

13th June at Blackpan Common: dragonfly, *Libellula quadrimaculata*.

11th July at Luccombe Down: butterfly, Dark Green Fritillary.

28th August in Florence Road, Shanklin: butterfly, Milkweed.

J. M. CHEVERTON

House Crickets at Newport—During the hot weather there were two records of house crickets, *Acheta domesticus*, on either side of the High Street, Newport. One was in the new part of the County Hall, whereas the other was in a newsagent occupying and building on the opposite side of the road. Both were males.

O. H. FRAZER

Ladybirds at Brook. On 1st August this year I counted at least 300 ladybirds in a cluster on the handrail by the steps leading down to the beach from Brook Green. At the same time a number of visitors were coming up from the beach in some distress, because "there were swarms of ladybirds down there, and they were biting and making life intolerable".

OLIVER FRAZER

Muntjac Deer at Combley. Mr. J. V. Willis Fleming, a director of Robin Hill Country Park, said that two muntjac deer – an Asian species about the size of an alsatian dog – escaped from the park about three years ago. These had since bred a wild population, and were mostly seen around Combley Wood, though a Customs officer saw one swim the River Medina near Newport early one morning recently, and another was seen in a garden at Carisbrooke a couple of months ago.

I.W. COUNTY PRESS, 18/9/76

Mole-cricket at Norton, Freshwater. On 18th October my husband and I saw a Mole-cricket, *Gryllotalpa gryllotalpa* (L.), in the outside "loo" at Providence House, Norton Green. I returned it to the garden, but we have not seen it since.

MARJORIE COOPER

Fungi at Ryde—On Thursday, 16th December, Mrs. Alice Wilkinson of Great Preston Road, Ryde, reported that she had 8 to 10 of the rare fungus, *Clathrus ruber*, in various stages of development growing in her front garden. I took several photographs and also sent a specimen to Dr. G. C. Dunning. During the week that followed I succeeded in obtaining some time-lapse cine in 8mm of the expanding fungus, which was shown at the A.G.M.

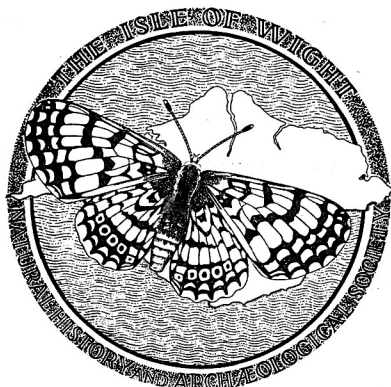
O. H. FRAZER

VOLUME VII

PART II

PROCEEDINGS
OF THE
ISLE OF WIGHT
NATURAL HISTORY AND
ARCHÆOLOGICAL SOCIETY

1977



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OFFICERS

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Editor of Proceedings

Mr. O. H. Frazer, Mottistone Mill, Brighstone, I.W.

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Mrs. K. Wadham, Gullsway, Castle Court, St. Lawrence, I.W.

Schools Liaison Officer

Mr. P. Ewbank, Yew Tree Cottage, Victoria Road, Freshwater, I.W.

Society Representatives

Council for the Protection of Rural England – Mrs. D. A. Frazer

Countryside Advisory Panel, I.W.C.C. – Mr. J. Stafford

Hampshire & I.W. Naturalists' Trust, Ltd. – Mr. J. Stafford

Isle of Wight Society – Miss K. Page

Newtown Local Nature Reserve Management Committee – Mrs. D. Frazer

World Wildlife Fund – I.W. Supporters' Group – Mr. J. Stafford

I.W. Archaeological Committee – Miss M. Middleton

Bird Recorder

Mr. J. Stafford, M.A., Westering, Moor Lane, Brighstone, I.W.

Botany Recorder

Mr. B. Shepard, 87 Elm Grove, Newport, I.W.

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Mrs. D. Frazer, Mottistone Mill, Brighstone, I.W. PO30 4AW

(Publications sent in exchange, or enquiries re back numbers of "Proceedings" available, should be addressed to the Librarian, I.W. Natural History and Archaeological Society, c/o Agricultural House, 66 Carisbrooke Road, Newport, I.W.)

SECTION LEADERS

Access to the Countryside

Mrs. C. Richardson, Westwood, 133 Castle Road, Newport, I.W.

Archaeology

Miss M. G. Middleton, Mirables, St. Lawrence, Ventnor, I.W.

Botany

Miss K. Page, 42 Carisbrooke Road, Newport, I.W.

Geology

Dr. A. Insole, Museum of I.W. Geology, County Library, Sandown, I.W.

Mammals, Reptiles and Amphibians

Mr. O. H. Frazer, Mottistone Mill, Brighstone, I.W.

Microscopy

Mr. D. Roberts, The Bee Farm, Lushington Hill, Wootton, I.W.

Ornithology

Lt.-Cdr. J. M. Cheverton, 6 Westhill Drive, Shanklin, I.W.

Seashore

Mrs. I. Gaskin, Westholm, 5 Church Road, Binstead, I.W.

NEW MEMBERS

(Elected to the Society during 1977)

- MR. T. G. ARMSTRONG, Flat 2c, Solent Court, Victoria Road, Cowes.
 MR. AND MRS. D. A. J. BAGNALL, 22 Norman Way, Wootton Bridge.
 MR. L. BATTY, Medina Valley Field Centre, Dodnor Lane, Newport.
 MR. C. M. BEARD, 6 Mount Street, Ryde.
 MISS W. M. A. BEAUCHAMP, Pippins, 10 Strathwell Crescent, Whitwell.
 MAJOR AND MRS. M. J. P. CHILCOT AND FAMILY, Lions, Moor Lane, Brighstone.
 MR. A. J. CLARKE, Mariners, 122 Baring Road, Cowes.
 MISS J. E. AND MR. A. E. COLVER, 94 Pellhurst Road, Ryde.
 MR. M. DENBURY, c/o 19 Partlands Avenue, Ryde.
 MR. AND MRS. T. C. DICKER, Brook Cottage, 6 West Street, Wroxall.
 DR. R. DICKSON, St. Michael's Vicarage, Hempstead Road, Paulsgrove, Portsmouth.
 MR. J. R. DIMMICK, 36 Alexandra Road, Ryde.
 MR. AND MRS. D. S. DORRINGTON AND FAMILY, West Acre, Weston Lane, Totland Bay.
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 MRS. C. C. DOWDEN, Woodvale, Havenstreet, Ryde.
 MR. G. R. ELSE, F.R.E.S., 6 Greenhill Close, West Hill Park Estate, Winchester.
 MR. C. I. FLETCHER, Chalfield, 2 Wilberforce Road, Brighstone.
 MR. AND MRS. F. HEAP, Rosebank, School Road, Godshill.
 DR. D. W. AND Y. HIDE, The Green, Shorwell.
 MRS. J. R. HULACKA, Dunromyn, Lushington Hill, Wootton.
 MRS. S. HUMPHREY, Prospect Cottage, Kemming Road, Whitwell.
 MR. AND MRS. J. W. JENKINS, Burleigh, 5 Meadow Glade, Victoria Road, Freshwater.
 MISS K. LANE, 36 Alexandra Road, Ryde.
 MR. R. LAWSON, c/o Metropole Hotel, Ventnor.
 MR. A. MATHER, 43 Granville Road, Cowes.
 MRS. A. MARCHANT, Merry Meeting, Ryde House Drive, Binstead.
 MR. T. G. MORRIS, Brooklyn, The Square, Freshwater Bay.
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 MR. AND MRS. P. SELLEN AND FAMILY, 10 Grangeside, Bonchurch.
 MR. C. T. SLAWSON, 40 Robin Hood Street, Newport.
 DR. I. G. SMITH, Winton, 23 Garratts Lane, Banstead, Surrey.
 MISS J. SQUIRRELL, 18 Pan Close, Newport.
 MRS. L. J. SNAITH, 3 Grove Road, Cowes.
 MR. R. TEMPLETON, 11 Uplands Road, Northwood, Cowes.
 MR. C. R. TUBBS, Nature Conservancy Council, Shrubbs Hill Road, Lyndhurst, Hants
 MR. M. WILLIAMS, Woodvale, New Road, Wootton. [SO4 7DJ.
 MR. R. G. WILSON, 1 Lincoln Way, Bembridge.
 MISS J. WOOD, 40 Albert Street, Ryde.
 MR. A. YULE, Highfields, Thorness Bay, Cowes.
 SANDHAM MIDDLE SCHOOL, Perowne Way, Sandown.

GENERAL MEETINGS, EXHIBITIONS, AND EXCURSIONS

General Meeting on 11th February, 1977.

There was a large attendance of members to hear an illustrated talk on Dinosaurs by Dr. Alan Insole.

Introducing the speaker, the President, Mr. J. Stafford, said that the Society was very fortunate in having Dr. Insole not only as the Curator of the Museum of I.W. Geology and Palaeontology at Sandown, but also as the leader of the Society's very active Geology Section. He was a specialist in Dinosaurs.

It was his aim, the speaker said, to put the record straight about Dinosaurs, since there were many popular misconceptions, and even some books on the subject were totally misleading. As an example he referred to a detailed description of a particular species of Dinosaur, named *Yaverlandia*, from a book, which described its size and how it looked, behaved and what it fed on. Yet the only evidence of the existence of this species at all was one very small fossil bone, found at Yaverland, which he showed to the audience. Such examples of wholly imaginary speculation are all too common.

By means of a series of charts, the speaker showed how the true Dinosaurs fitted in to the general pattern of evolution. They had their origin in the Triassic period about 225 million years ago, and continued through the Jurassic and Cretaceous Periods, at the end of which they became extinct. Evidence of their existence in the form of fossil bones, footprints and even eggs has been obtained from all over the world, except in Antarctica, and of the many species so far identified no fewer than 23 species have been recorded from the Cretaceous deposits in the southern half of the Isle of Wight, although in only five of these have anything like complete skeletons been obtained.

Tracing the evolution of the Dinosaurs under two main groups, the Saurischians and Ornithischians, distinguished by a clear difference in the arrangement of the pelvic bones, the speaker illustrated his remarks with some excellent pictures of fossil evidence as well as graphic reconstructions based on recent research. Not all the Dinosaurs were such enormous monsters as is commonly supposed, and some were quite small. The Saurischians included the best known of all Dinosaurs, *Tyrannosaurus rex*, which was certainly a formidable creature and, like many in this group, was carnivorous. The Ornithischians, however, included some, such as the *Iguanodon*, remains of which are found in the Island, weighing some 7 tons, 25 feet long, with the head some 15 feet above the ground when walking, and yet purely vegetarian in its feeding habits. The effect of a number of these monsters on their environment must have been considerable.

Another species, remains of which have been found on the Island, is the *Hypsilophodon*, which was fairly small by comparison, but extremely fast, being capable of a speed of some 50 m.p.h. An interesting point here was that two complete specimens were found together, indicating a possible social behaviour in this species.

Finally, discussing the recent arguments put forward to support the theory that Dinosaurs were warm-blooded, he concluded that, although he had reservations about some of the evidence, he was inclined to draw the same conclusions, but for different reasons. However, with further evidence, particularly from Texas and not

least from the Island, it was hoped that much more will come to light and settle some of the many outstanding problems about this fascinating group of extinct reptiles, of which the only living examples today are the Crocodiles and Alligators and possibly, by descent from the *Archaeopteryx*, the Birds.

Many questions were answered and some specimens brought by members were identified and named. In this connection, however, the speaker stressed the importance of ensuring that any finds were made known to him at the museum. If anything like a complete skeleton is found, it should be reported at once, as its proper extraction and treatment is a very difficult task and quite beyond the abilities of an amateur. It would be tragic indeed if a potentially valuable specimen was dispersed into a number of private collections.

The President thanked the speaker for a most interesting and informative evening.

General Meeting on 11th March, 1977.

Members heard a most interesting lecture on "Isle of Wight Seaweeds" by a visiting lecturer, Mr. W. F. Farnham, of the Marine Laboratory of Portsmouth Polytechnic.

Introducing the speaker, the President said that he was already well known to members of the Seashore Section, who had recently visited the Marine Laboratory, and the Society was particularly fortunate in the fact that Mr. Farnham and his colleagues carried out much of their work on the Island and were consequently increasing our knowledge of the marine flora and fauna, in which task it was hoped that members of the Society could also make their contributions.

In his opening remarks the speaker referred to the many eminent phycologists, mostly women, who had recorded seaweeds in the Island during the last hundred years. Following a regrettable gap in recording during the 1930's, this work had been resumed and intensified by staff and students at the Portsmouth Polytechnic in recent years, using the latest techniques, particularly skin-diving, by which some species, which had previously been considered as rare, because only occasional specimens had been washed up after storms, were now known to be common in deeper water beyond the lowest tides. Many changes had been observed, and there was considerable evidence that long-term fluctuations occurred.

Seaweeds were very variable in form and structure, which made positive identification very difficult in many cases, but there was always the chance of finding a new species, which made the work interesting and exciting. The most interesting result of their work, however, had been the recording of introduced species. In this respect the nature of the shore at Bembridge, and its position at the approach to the two major ports of Southampton and Portsmouth, made it probably the best site in the country and worthy of consideration as a Nature Reserve. It so happened that most of these introductions had been from Japan, the earliest being *Codium fragile*, a large spongy green seaweed, which differs only in microscopic characters from the native *Codium tomentosum*, but is so prolific that it has largely replaced the native species on our shores. Since the last war a number of species of brown and red seaweeds had also been introduced, either by shipping or, more likely, with Japanese Oysters. There had also been some notable animal introductions, such as the New Zealand barnacle, *Elminius*, and a new sea-squirt from Korea, associated with journeys of warships at high speed between those parts and Portsmouth. In most cases, however, these introductions have merely added to the interest of the shore and have presented no particular

problems. The same cannot be said of the Japanese Seaweed, *Sargassum muticum*, which was first found at Bembridge in February, 1973, since when, in spite of strenuous efforts to control it, it has spread alarmingly. We have the evidence from British Columbia, where the same weed was introduced under similar conditions, and in ten years has spread some 2000 miles along the coast to California, making waters un-navigable for small boats.

Following tea, kindly provided by Mrs. Prangnell and helpers, members saw a film with commentary, made by Portsmouth Polytechnic, on *Sargassum muticum*, which showed most graphically the size of the problem. Many questions were answered and specimens identified by the speaker, who was cordially thanked by the President for a most instructive evening.

Excursion to Chale on 16th April, 1977.

A large number of members met at Chale Church and were welcomed by the Rector, the Rev. E. N. Ward, and his wife.

After assembling in the church, the President expressed the deep gratitude of members to the Rector and his wife for their attendance, particularly as they were in the throes of moving house to Niton. Mrs. Ward then gave an account of the main features of the church, which are well explained in the Guide to the Church, written by the former Rector, the Rev. C. Sinclair, and Mr. F. Mew, a former President of the Society. She also spoke of the local landmarks and their history, which provided the back-cloth for the present active village community.

After inspecting the features in and around the church, including the tomb of some of the victims of the shipwrecked "Clarendon", members walked past Chale Manor and Abbey Farm, up St. Catherine's Down, to the Hoy Monument, sadly in need of repair, and back by a different route, thus completing a very pleasant outing.

Excursion to Watchingwell on 21st May, 1977.

Members met at Corfheath Firs, near Porchfield, for a walk of general interest in the Watchingwell/Swainston area, led by Mrs. L. Prangnell.

The President asked if those with special knowledge would help with identification of specimens seen on the walk for the benefit of other members. A good variety of wild flowers, insects and birds were observed in the course of a most enjoyable walk in warm, sunny weather. Of particular interest was the sight of a large established Wild Service Tree in full blossom.

Visit to Queen Elizabeth Country Park on 18th June, 1977.

A good number of members took advantage of the excellent arrangements made by the Programme Secretary, Mrs. L. Prangnell, and travelled in comfort to the Queen Elizabeth Country Park, near Petersfield.

On arrival at the Park Centre, members spent some time examining the exhibits in the well laid out exhibition hall, before walking to the Iron Age Farm Demonstration

Area, where they were received by Mr. Peter J. Reynolds, M.A., F.S.A., the Director of the Butser Ancient Farm Project, who spoke on the aims and objects of the work being carried out. By using evidence from archaeological excavations, fieldwork and documentary sources, the intention is to re-create a real working model to test the explanations and theories of the archaeological evidence. The central feature was the large round Pimperne House still under construction.

Members then made a tour of the farm under the direction of Mr. Jack Langley, who explained some of the difficulties met with, as well as solutions found, in their work of re-creating the past. In the paddocks were Soay Sheep and Dexter Cows, the nearest modern parallel to the Iron Age cattle, which were used to pull the primitive plough or ard, which had been reconstructed and put to use. Crops included Woad, Celtic Beans, Fat Hen and Emmer Wheat. Various forms of pottery kilns were also under construction.

Members returned to the Park Centre for a picnic lunch, after which they divided into groups to walk one or other of several trails through fascinating beech woods and on open downs, carpeted with flowers, to complete a most interesting visit, in spite of the rather cold dull weather.

Excursion to Luccombe area on 16th July, 1977.

Members met at Luccombe Village in the morning for a walk of general interest along the Coastal Path through Luccombe Common and the Landslip. The leader, Lt.-Cdr. J. Cheverton, R.N., gave a brief account of the long history of Luccombe Manor through Saxon and Norman times, although the present building is of more recent origin. Arrangements were made for the leaders of the various sections of the Society to be present and on hand for the identification of specimens. There were several species of plants, which were identified by Miss K. Page, including the very local Narrow-leaved Everlasting-pea, *Lathyrus sylvestris*, and a number of St. John's-worts. Orchids of different species were also in evidence. Some young kestrels and gannets were seen, and, after a picnic lunch on open ground to the south of the Landslip, a school of some six dolphins were observed, probably feeding on mackerel at some distance from the shore, but not close enough to be positive of the species.

The party then returned to Dunnose Cottage, where further members were met for the afternoon session. They descended the steps on the side of Luccombe Chine to the shore. Here Dr. Alan Insole explained the formation of the chimes and the geology of the adjoining cliffs, which are here composed of the Sandrock Beds of the Lower Greensand and the underlying Ferruginous Sands. Members searched for fossils, which were identified and commented upon by Dr. Insole, as they returned towards Shanklin, eventually climbing Appley Steps and returning to the starting point.

The President thanked the leader and all those who had helped to make this a most enjoyable and interesting walk.

Private View of Local Look on 31st July, 1977.

The President welcomed a large attendance and paid tribute to the immense amount of work done by members. The aim of the meeting was twofold, first to give members

an opportunity to see the exhibition before it was open to the public, and secondly to brief those members, who had kindly agreed to act as stewards.

Mrs. K. Wadham, Chairman of the Local Look Committee, thanked the members who had offered their services as stewards and explained some of the details of organisation which required special attention to ensure the smooth running of the exhibition.

Mr. O. H. Frazer, the over-all organiser of the exhibition, then drew attention to the main features on display, with special reference to those items, which had been entered after the otherwise comprehensive Guide to the Exhibition had been prepared.

Members then examined the displays and a working party was formed to complete the folding and stapling of the Guides in readiness for the opening on the following day.

Exhibition Local Look at Brook from 1st to 31st August, 1977.

A report of this, the 17th "Local Look" Exhibition, appears later in these *Proceedings*.

Excursion to Chilton Chine and shore on 17th September, 1977.

The President welcomed a large gathering of members at Chilton Chine and explained the arrangements which had been made for the meeting. Although primarily a geological outing under the leadership of Dr. Alan Insole, other Section Leaders or their representatives were present to identify specimens and explain points of interest. The first of these was a Sarus Crane, which was clearly visible in a field close by. It was almost certainly an escape and had been in the vicinity for several days.

Dr. Insole first explained the origin of the Wealden rocks, which would be examined that afternoon. They were composed of various clays and sandstones laid down some 120 million years ago, and were the oldest rocks visible in the Island. Recent evidence had shown that these were flood plain deposits, and the climate was probably similar to that in North Africa today, with seasonal rainfall.

The area was famous for dinosaur remains, which previously had been thought to have lived and died elsewhere, and to have been carried down in a state of decomposition by a large river from the west to be deposited in the mud of the so-called Wealden Lake or Estuary, but it was now clear that some actually lived here, as shown by the clear footprints recently discovered.

The party then walked along the shore in a westerly direction, and Dr. Insole pointed out many features of the deposits from which it was possible to conclude the precise details of events occurring millions of years ago. As they examined fossilised mud-cracks, ripple marks, animal burrows and tubes, members were thrilled with this new approach to geology, which brought the distant past to life.

On the cliffs members were pleased to note the winter webs of the Glanville Fritillary, and also to see that the naturalised African Clawed Toads, *Xenopus laevis*, had apparently survived last year's severe drought, although much reduced in numbers.

The return journey was made at low tide, and specimens of seaweed and other shore life were sought for and commented upon by Mrs. J. Greaves and Mr. O. Frazer.

Finally, members were able to see some of the dinosaur footprints, which still remained, although the best had been lifted and were now receiving treatment at the Museum of I.W. Geology at Sandown, where they will be on view in due course. It was clear, that if left in position on the shore, they would very soon be eroded by the action of the sea, particularly in the autumn gales.

The President thanked Dr. Insole and the other Section Leaders for a most interesting afternoon, and invited members to his home for tea.

Fungus Foray and Exhibition on 22nd and 23rd October, 1977.

Over 60 members and friends met at the National Trust car park on Mottistone Down and were welcomed by the President, who introduced the leader, Mr. O. H. Frazer.

After showing and commenting on a number of fungus specimens, which he had collected that morning, the leader asked members to divide up into six roughly equal groups, each with its own leader, to search for and collect specimens in different areas of Brighstone Forest and Mottistone Down.

When the six parties returned to the meeting place with their finds neatly arranged on the trays provided, there was no doubt that this was an exceptionally good year for fungi. The specimens were then transported to the Teachers' Centre, Newport, where they were sorted out, identified and labelled by the leader and Mr. Jonathan Knill-Jones, with the assistance of Jonathan Cox. At the same time Mr. & Mrs. R. Snow collected specimens of the spores of different species, which they mounted on microscope slides.

The specimens were arranged in systematic order to form an impressive display, which was open to members and their friends on Sunday afternoon, when once again there was a very good attendance. There was a total of 128 named species, including five species, which, subject to possible changes in nomenclature, do not appear to have been previously recorded in the Island. These were *Tyromyces lacteus*, *Clavulina amethystina*, *Ischnoderma resinosum*, *Ganoderma lucidum* and *Peziza micropus*, all submitted to the Royal Botanic Gardens at Kew for verification. There were also a number of Slime Fungi or *Mycetozoa*. The leader gave a short talk on the specimens collected and showed some colour slides of some species which were absent this year. Members were then able to examine the specimens and look at the microscopic details under the microscopes provided by Mr. D. Roberts, Mr. F. Neat and Mr. and Mrs. R. Snow, while tea and biscuits were served by Mrs. B. Hodgson and helpers.

The display was left up over Monday for the benefit of a group of teachers and local schools.

General Meeting on 18th November, 1977.

Members of the Society, together with parents and friends of participating students, met at Cowes High School to receive the report of the nineteenth Annual Newtown Survey, held from 25th May to 12th June, inclusive. The report was illustrated with coloured slides and 8mm film, and there was a full and comprehensive display of the work undertaken. A report of the work carried out appears later in these *Proceedings*.

General Meeting on 10th December, 1977.

There was a good attendance of members at the Teachers' Centre, Newport, to see and hear about a week's visit by a party of twelve members under the leadership of the Botanical Recorder, Mr. B. Shepard, to Flatford Mill Field Study Centre last June.

The President welcomed members and introduced the main speaker, Miss K. Page, who explained that, although the visit was primarily for botanical studies, the party also included members who were knowledgeable about birds archaeology and art, so it was possible to cover a wide range of activities.

Her talk, which was illustrated by coloured slides mostly taken by herself, Miss H. Blount, and Mr. E. H. Burn gave a vivid account of the party's experiences both in and around Flatford Mill itself, where they were accommodated in Willy Lot's Cottage, made famous by the 19th century landscape painter, John Constable, and the many interesting old "wool towns" and other sites of special interest, which they visited each day. Of special note was a visit to Brecklands, where there was a profusion of plants rarely found elsewhere, followed next day by a visit to Sizewell, where the shingle was a mass of the glorious Sea Pea, which used to occur on the Island more than a hundred years ago. The next day included a visit to the Rex Graham Nature Reserve, where arrangements were made for them to be able to see and photograph the very rare Military Orchid in flower.

After the President had thanked the speaker and all those who had taken part, members were able to examine the exhibits of paintings, photographs and literature relating to the places visited.

General Meeting on 13th January, 1978.

Members were virtually "transported to Australia", when Mr. N. G. Partridge gave an illustrated talk on some birds of that vast continent, which he had observed during visits there.

Introducing the speaker, the President said that, although the main interest of members was concerned with the natural history of our own small island, it was right and proper that we should on occasions be introduced to the wildlife of other lands. We had in recent years had lectures by members, who had visited Spain and Africa, and we would be hard put to it to find anywhere further afield than Australia.

Mr. Partridge began by comparing the wealth of bird life in Australia with that found in Europe, and stated that there were almost twice as many species of birds in Australia, so it really was a bird-watcher's paradise. Without having recourse to complicated Latin names, he was going to use the common names by which the birds are known, but warned that many of these, such as Robin, Wren and Finch, were given by the early settlers to some of the birds, because of their general similarity in appearance or habits, when in fact they belonged to quite different families from their more familiar namesakes. Members were then introduced to a wide variety of birds from the giant Emu to the tiny Blue Wren, and were thrilled with the brilliance of colouring displayed by many of them. The speaker then showed slides of some of the habitats he visited from the tropical rain forests of Queensland down the east coast of New South Wales.

After answering a number of questions, the speaker was thanked by the President for a most interesting and instructive evening.

Annual General Meeting on 21st January, 1978.

The President, Mr. J. Stafford, referred with regret to the loss sustained by the Society in the death of six valued members during 1977 – Mrs. L. Blair, Mr. N. Adamson, Mr. G. Smith, Mrs. M. Preece, Mr. H. A. Philbrick and Mr. R. H. G. Lee. Members stood in silent tribute.

In his opening address, the President, who had completed his three years of office, referred again to the three main activities of the Society to which he had alluded, when first taking office – Publication, Conservation and Participation – and felt gratified that in all these respects the Society was flourishing. The reports of the Officers, Committees, Recorders and Representatives on other societies, which had been previously circulated, were approved. Some of these appear elsewhere in these *Proceedings*. There was considerable discussion on the means by which the Society could help in the publication of the Flora of the Isle of Wight, which was now nearing completion. It was generally agreed that every avenue of assistance should be explored, and, on the proposition of the Rev. D. Low, it was agreed that the Society should support it to the limit of its ability.

After the President had moved a vote of thanks to the retiring officers, including his personal thanks to all those who had helped him so outstandingly during his term of office, the meeting then proceeded to the election of officers. Lieut.-Commander J. M. Cheverton, R.N., proposed by Mr. O. H. Frazer, seconded by Miss M. Middleton, was unanimously elected as President for the next three years and took the chair. The present Honorary Members were all re-elected with the addition of Miss E. Hewland, who designed the Society's emblem. Other Officers and Council members were elected, as shown elsewhere in these *Proceedings*.

After refreshments, kindly prepared by Mrs. K. Wadham and helpers, during which members were able to examine the exhibits, which included details of current Bird Surveys and some of the results obtained during the Newtown Survey held earlier in the year, members then re-assembled for a showing of coloured slides taken by members of the Society's activities during the past year, with a commentary by Mr. O. H. Frazer.

In addition to the above, regular monthly Working Parties at Borthwood, under the leadership of Mr. D. Cooper, were arranged from May to December, inclusive, and each Section also arranged its own full programme of meetings and activities, as indicated in the Section Reports.

SECTION REPORTS

Access to the Countryside

Walks were arranged as follows:

- 23rd January From the Viewpoint car park along the Carisbrooke Trail.
20th February From the Viewpoint car park at Blackgang along the Blackgang Trail.
20th March From Wroxall Village for a walk in the Wroxall area.
24th April From the chalk pit on the Military Road over Compton Down.
22nd May From the National Trust car park on Mottistone Down, a walk in the Westover area.
12th June From the "Dell" at Shorwell, a walk in the Shorwell area.
17th July From the old brickworks, a walk in the Rookley area.

At the request of the Tourist Board, the remaining walks for this year were devoted to re-walking the Local Look Nature Trails, which were originally compiled by the Society, to see if any alterations had occurred involving amendments to the wording before they were reprinted.

- 10th September River Medina Nature Trail.
9th October Western Yar Nature Trail.
27th November Carisbrooke Nature Trail.

MRS. C. RICHARDSON

Botany

- 27th March Walk at Havenstreet, led by Gwen Bunce. A very wet and cold day. We went into Kemphill Moor Copse and looked at the trees, mostly aspens and other poplars. Very few flowers, because of the cold weather, apart from violets, dog's mercury and wood anemones. There were also a few scattered clumps of wild daffodils, which started a discussion on the question of the apparent sterility of the daffodil, and whether they only reproduced vegetatively on the Island.
- 9th April Walk at Ashengrove Farm, Calbourne, led by Bill Shepard. The wind was very cold, but the day was fine and bright. Once again the spring flowers were very sparse, because of the cold weather. We walked up the hill, through Highwood and past Mudless Copse to Rowridge and back by Apesdown. Ransoms and bluebells were vigorous, but not yet in flower. At Top Barn we found a good stand of toothwort and a massive wind-pushed oak by the pond, which contained water-crowfoot.
- 28th May A dramatic walk up and around the outcrop of rock on the north side of St. Martin's Down, led by Lorna and Ron Snow. There was indication that there had been more woodland by the presence of pignut and bluebells. On the down we found a few green-winged orchids, but the most striking feature was that the down was golden with the bulbous buttercup. It was quite fantastic.

- 11th June Walk at Niton, led by Miss Middleton. After having a brief history of the village, we clambered up the lane by the church and found the rose, *Rosa coriifolia*, with a few blooms fully out and a lot of buds. There is a great interest in this rose, which is used as a briar for grafting in Western Europe, and this is the first record of it being naturalised in Britain. We continued up on to the downs and walked past St. Catherine's Oratory and back to Niton on a path that runs parallel to the main road, Apart from some magnificent musk thistles, there was very little downland flora. The last path was sandy and showed evidence of badgers and foxes.
- 26th June Walk at Fort Victoria, led by Mr. Burn, to help in recording the plants to assist Mr. Traves in the planning of a Nature Trail. The Misses Coward took one group to record the ferns, Mr. Pat Ewbank recorded the trees, while Mr. Burn and Miss Page concentrated on the flowering plants. The return was made along the shore.
- 9th July Walk at Freshwater Marsh, led by Mr. Burn, Starting in Afton Road, we crossed the head of the marsh, down the west side to Blackbridge, where the marsh plants showed up well. We continued to the Afton Nature Reserve and followed the path to the Causeway, recording over 50 flowering plants.
- 11th September Walk in the Bowcombe and Idlecombe area to see the night-flowering catchfly, led by Miss K. Page and Bill Shepard. Unfortunately sheep had eaten all the catchfly, so we walked up through the Forestry plantation, where there was a very rich flora, including a bank covered in blue fleabane. We also found several crane's-bills, including long-stalked, cut-leaved and dove's-foot crane's-bill. We returned to Rowborough on the path skirting the woodland, and the night-flowering catchfly was found on the bank.
- 15th October Walk in Firestone Copse, led by Mrs. D. A. Frazer, We met at the new car park made by the Forestry Commission and walked the newly laid out Forest Trail. There was a good woodland flora and a fine stand of wild service-trees turning scarlet ahead of the other trees around, and a number of young seedling trees in the area. We heard the wood crickets stridulating, and were well bitten by large clegs!
- 5th November A walk to see mosses and ferns, led by Bill Shepard, We met at Shide bridge, Newport, in torrential rain, and followed the old railway track, where the wet ditches provided lovely ferns and other water plants. Cutting across the fields to Standen Manor, we followed the lane that leads to St. George's Down, which gave us a wealth of mosses and ferns. Eventually we had to abandon the walk, as it became so dark we could not see the plants, so we returned to Shide over the top of St. George's Down.
- 16th November This was an indoor meeting to discuss the activities of the past year. Mr. Shepard gave a summary of plants of special interest

that had been recorded, and this appeared in the Bulletin. Members showed coloured slides, which they had taken of plants and sites of special interest.

MISS K. PAGE

Geology

The section began this year's activities with an indoor meeting at Sandown Museum, but the remainder of the meetings were held outdoors. The majority of the meetings were held at localities which the section has usually visited annually, such as Alum Bay and Whitecliff Bay. However, the section held a meeting at Castlehaven in November, a locality which has been rarely examined in the past. Although it proved disappointing from the point of view of fossils, the section in the Sandrock in the bay did exhibit a wide variety of sedimentary structures, some of which are not recorded from this part of the Lower Greensand sequence.

Perhaps the most important discovery in the year was the discovery in March of a series of dinosaur footprints at Chilton Chine by Mr. William Blows. Several members of the section later helped in the removal of a selection of the footprints to Sandown Museum where they will eventually be displayed. Two types of dinosaur were represented by the tracks. Most of the footprints were made by the medium sized carnivore *Megalosaurus* but a few much larger prints seem to show that a much bigger carnivore, possibly *Antrodemus* (= *Allosaurus*) was also present. The latter is something of a surprise since no bones of *Antrodemus* have ever been recorded from the island. Clearly we still have much to learn about the dinosaur fauna of the Isle of Wight Wealden.

DR. A. N. INSOLE

Mammals, Reptiles and Amphibians

The first meetings arranged for this section took the form of exploratory walks in different areas looking for signs of mammals, reptiles and amphibians as a guide to future field meetings. The first, on 27th February at Parkhurst Forest, was very well attended, yielding plentiful signs of red squirrels and a water vole's nest. An unusual sight was one holly tree still covered in red berries, when all the others had long since been stripped. On 19th March a walk in Steyne Wood, Bembridge, led by Dorothy Frazer, yielded a few gnawed nuts giving evidence of wood mice, but little else. On 11th April a walk from Chale Green to St. Catherine's Down provided plentiful evidence of badgers and much else of interest. On 19th June a visit to Rocken End gave us an excellent view of a fox and netting of the ponds disclosed some palmate newts, which had previously been recorded there in 1976.

The other meetings were concerned with the Small Mammal Survey and consisted of field meetings in various areas, using the 30 Longworth Live Mammal Traps in the possession of the Society, which we now call "inspection boxes" to allay the fears of those members to whom the word "trap" may have sinister connotations. Unfortunately the meeting arranged for 1st May at the newly acquired National Trust property at the Needles had to be cancelled owing to unforeseen circumstances, but on 17th July a small mammal survey of Stag Copse, Parkhurst, was carried out with the co-operation of the Warden, Mr. Andy Keay. The inspection boxes, which had been pre-set some days before, were distributed in three different areas: Nos. 1-10 were placed in an area of long grass and bramble with only light tree cover; Nos. 11-20 were set at the base of fairly dense coppiced hornbeams with no other ground cover;

Nos. 21-30 were distributed in an area of mixed woodland with large trees, mostly beech, oak and ash, with some shrubs and bramble thickets. The boxes, were as usual, inspected at two-hourly intervals from dawn until mid-day and yielded 4 wood mice, 9 bank voles and 1 common shrew, with no recaptures, representing a total catch of 14 in 120 box inspections, or 11.63%. The first and last areas were average in what they produced (15-17%), but the overall percentage was reduced by the coppiced hornbeam yielding only one bank vole, due no doubt to the lack of ground cover.

On 11th September a field meeting took place at the Firs, St. Lawrence, by kind permission of Mrs. Connie Pelham, who also undertook the task of pre-baiting and setting the boxes some days before, which was most helpful. These were again set in three contrasting areas: Nos. 1-10 under scattered pine trees with ground cover of low-growing *Clematis*; Nos. 11-20 under scattered pine trees with light bramble ground cover; Nos. 21-30 under pine trees with almost continuous ivy ground cover. All areas were most productive, yielding 14 wood mice, 3 short-tailed voles, 41 bank voles and 1 pigmy shrew, of which 2 wood mice and 7 bank voles were recaptures. This represents a total of 59 in 120 box inspections, or 49.17%, which, by any standards, is extremely high, indicating a high population of small mammals of four species, not to mention their predators such as foxes and stoats, which were also in evidence, in this favoured area.

An informal meeting was held on 28th November to discuss the year's activities and plan future meetings.

O. H. FRAZER

Microscopy

Meetings were held as follows:

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| 15th March | An indoor meeting to look at insects and their organs under the microscope. |
| 24th May | Pond dipping in the grounds of Dunjen, 42 Fishbourne Lane, Ryde, by kind permission of Mrs. Jean Greaves. |
| 15th November | An indoor meeting to see a further selection of microscope slides from the wonderful collection made by the late Dr. Blair, of Freshwater, now in the possession of Mr. O. H. Frazer, who commented on them. |

The Society's microscopes were also made available at a number of general and other section meetings as requested.

D. ROBERTS

Ornithology

Meetings were arranged as follows:

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|--------------|---|
| 29th January | On the beach at Foreland. Purple Sandpipers were among the many species seen. |
| 6th February | A walk along the disused railway track from Shide to Blackwater. |
| 5th March | Rowborough and Brighstone Forest. Disappointing for birds, but good views of a fox and leveret. |
| 27th March | Luccombe Down. Cancelled because of heavy rain. |
| 30th April | St. Catherine's Point. Good views of a singing Cettis Warbler made this a memorable outing. |

- 27th May A walk from Yarmouth to Freshwater along the east bank of the Yar, returning via the west bank.
- 10th June A walk from Newchurch to Alverstone. Disappointing, as the rarer warblers known to be in the area remained silent and out of sight.
- 28th August Newtown Nature Reserve. Redstarts, Whinchats and Little Terns joined the many waders that were seen.
- 24th September St. Catherine's Point. Common Sandpipers, Gannets, Yellow Wagtails and twelve female Pintails were seen.
- 16th October Headon Warren, Alum Bay and West Highdown. Sixteen Stonechats, a Merlin and an unexpected Dartford Warbler brightened the day.
- 5th November Brading Harbour. Shooting in the vicinity spoiled the visit, but 82 escaping Pochard were seen.
- 2nd December At an indoor meeting Jim Cheverton gave an illustrated talk on waders and John Stafford gave the results of the Black Redstart survey.
- 26th December Shide to Blackwater along the disused railway track. Redpolls, Siskins and a Merlin were seen.

Members also took part in the Estuaries Enquiry for the B.T.O., Wild Fowl Count for the Wild Fowl Trust, Beached Bird Counts for the R.S.P.B. and Forest Surveys for the Forestry Commission.

J. M. CHEVERTON

Seashore

The year started with an indoor meeting, when members showed slides and discussed the past year's activities. Plans were made for a full programme of meetings for the coming year. In February a most successful visit to the Marine Laboratory of the Portsmouth Polytechnic, at Hayling Island, was well attended. The party was conducted round in two groups by Mr. W. Farnham and Mr. P. Gray, who also gave us an illustrated talk on the work carried out there. In March Dr. Insole gave a most interesting talk on "The making of a beach", and in April a survey of the beach at Fort Victoria was carried out at the request of Mr. Traves.

At the meeting at Seagrove Bay in early May members learnt of their leader's unfortunate accident, but with considerable help from Mrs. Jean Greaves and other members, the section's activities continued. A slight confusion occurred over a meeting at the Local Look store in June, but a further meeting ensured that a very creditable display for Local Look was completed in good time. A meeting at Bembridge in July for examining the *Zostera*, followed by a visit to Bembridge School to use the microscopes, also gave an opportunity to collect fresh specimens for the Local Look display.

A meeting at Binstead in September disclosed numerous specimens of the Snakelocks sea anemone, which had not been noticed here before, and in October another visit was paid to Bembridge School for an illustrated lecture by Mr. N. P. Lovely, followed by some practical work. The last two meetings were held at the home of Mrs. Jean Greaves at Fishbourne, and these were concerned with identification of shells and seaweeds.

MRS. I. GASKIN

CONSERVATION REPORT FOR 1977

By Dorothy Frazer

The changes in the countryside in 1977 were mainly attributable to the continuing loss of elm trees due to Dutch Elm Disease and in some measure to farming practice, which was thought to be part of the European Economic Community's Common Agricultural Policy. However, it seems that, in order to bring the rewards of agriculture more into line with those of industry, grants are available to help farmers make the best use of their capital investment in land and machinery. The rapid changes in the countryside that result from this policy and the use of modern machinery are always viewed with apprehension by many people, but the need to balance the conservation of wildlife with the necessity of increased food production has to be considered. To this end, the Nature Conservancy Council, in consultation with over 40 departments and organisations, produced an appraisal published under the title, *Nature Conservation and Agriculture*, which urged a more positive strategy for rural land use.

The Council for the Protection of Rural England invested some of their Golden Jubilee Appeal funds in stocks of young trees, which were potted up by members, many of whom are also members of the Society. A total of 1,500 young Scots pines, southern beech and ash were potted up at King's Manor, Freshwater, and about 600 more, including oak and sycamore in the East Wight, with the aim eventually of planting in groups to enhance the landscape. As representative of the Society, I or a deputy attended all the monthly executive committee meetings, at which many matters of importance are discussed and appropriate action initiated.

My main task of the year, however, was in connection with the preparation of a new Draft Management Plan for the Newtown Local Nature Reserve, on the Management Committee of which I am the Society's representative. It was hoped that the Society would be given the opportunity to see and approve the new Management Plan before it was finalised, but it was the view of the Committee that, as I was representing the Society on the Working Party producing the draft of the Management Plan, the Society's views would be adequately covered thereby. This meant that at all stages I had to consult members of the Conservation Committee and seek their views with regard to a multiplicity of details. In making representations to the Management Committee on behalf of the Society on a number of important points of principle endorsed by the Council, I was placed in the unenviable position of having to oppose some views expressed by the representatives of the Nature Conservancy Council and the Hampshire and Isle of Wight Naturalists' Trust, although most of the recommendations of the Society were eventually accepted. A number of important matters still remained to be settled as the year ended. Once again members of the Society acted as voluntary wardens during times of pressure on the reserve.

The South Wight Borough Council Management Advisory Committee for the Freshwater Marshes met four times in the year, which I attended as representative of the Society. The notes and suggestions for use and development of the area, prepared by members of the Society in 1964, and approved by the Nature Conservancy at that time, were up-dated and made available to the Committee. A map with notes on management of different areas of the marsh was prepared by Jim White, the Conservation Officer of the Hants & I.W. Naturalists' Trust. Tree planting was carried out to

improve the environment and screen the industrial site at the north end, and a small dam was formed by the hard work of an enthusiastic group of young people under the direction of Pat Ewbank and Stuart Traves. The walk round the nature reserve is proving an asset to the West Wight. A survey of the Western Yar Valley, produced by J. M. Waters and C. R. Tubbs of the Nature Conservancy Council, should prove a valuable source of information for the future management of the area.

On 18th October I met Mr. Bob Page, the new Conservation Officer for the Hants & I.W. Naturalists' Trust, and Mr. Andy Keay, the Trust's warden of the Stag Copse Nature Reserve, for a site inspection of the copse, after which I took them to Swanpond Copse for a tour of that reserve also.

A meeting at Fort Victoria Country Park took place in December, when ideas for the proposed interpretative display were discussed with Mr. S. Traves.

Amongst other activities concerned with conservation, I assisted Mr. L. Harvey in judging the special projects submitted for the Best Kept Village Competition, and in the course of adult education lectures in different parts of the Island, my husband and I took the opportunity to stress the importance of the conservation of the natural environment in the Island.

NEWTOWN SURVEY REPORT 1977

By L. E. L. Cox

The nineteenth consecutive annual survey was held at Newtown from Saturday, 25th May, to Sunday, 12th June, 1977, inclusive. The following took part:

Adults—Mr. O. Frazer, Mr. G. James, Miss W. Williamson, Miss D. Mattin, Mr. E. Etherington, Mr. and Mrs. L. Cox, Mr. A. Mills, Miss S. Mills, Mr. G. Cooper, Mr. and Mrs. T. Armstrong.

Students—Jonathan Cox, Gareth Hayles, Paul Redstone, Christopher Chambers, William Johnston, Robin Grant, David Grant, Clive Arnold, Ashley Small, Susan Lloyd, Nick Palaeologus, Tim Wrigley, Carl Aldous, Simon Holmes, Simon Wrigley, Alan Thorne, Michael Mullin, Julia Milne, Linda Dodman, David Fishburn, Lita Langridge, Tracy Hart, Marianne Wallace, Linda Jefferies, Helen Steele, Susan Martin, Nicholas Cox, Stephen Ayerst, Andrew Billowes, Catherine Aylward, Linda Methold, Juliet Edwards and Helen Palaeologus.

The emphasis on studies changed in the course of the fortnight as the make up of the party changed in age, sex and ability. Broadly speaking the first week catered for older students, whilst the second week saw the influx of a larger number of pupils from the third year, visiting Newtown for the first time. The second week was an all male affair, except for the presence of Susan Mills.

During the fortnight seven members of staff made their invaluable contributions to the work undertaken. In addition I must acknowledge the important part played by Zara and Terry Armstrong in setting up the camp at the start, and Andrew and Susan Mills, with Guy Cooper, who played an equally important part in the second week, in particular at the close of camp, when we experienced very bad weather conditions and were wallowing in a sea of mud.

This year we were able to take advantage of a wide range of tide levels that would expose the fossil reefs. The number of samples, the quality of the photographs and Andrew Mills' carefully produced route book are all evidence of the success of that operation. The short bit of film showing the tragic washing out of the ringed plover on its nest, however, is the other side of the coin. This was caused by full seas in conjunction with high winds producing an unusually high tide.

There was some overlap as students arrived or departed towards the end of the first week. The approach to studies was determined by the experience of the pupils concerned. Third year students attending for the first time were introduced to a range of activities with the idea of eventually finding specific studies that could be pursued to some depth and perhaps maintain a continuous record of changes to habitats over a period of time. Oliver Frazer's series of programmes in "What's in a Habitat?" formed the basis of introductory work and proved to be most effective.

A second group consisted of pupils who were returning for a second or third time to continue work started in previous years. The work on mammals, birds, ants, moths and butterflies, shore life and erosion are examples of the continuing observation and recording that is undertaken. We now have a nucleus of pupils who have been visiting for a number of years. Some as past students return to lead groups, while others who are just in the sixth form will be returning to complete work that will form an integral

part of "A" level Biological studies. A separate section in the display contains records from previous visits, and reference to these records will show the marked change in populations seen in species studied in just the last two years.

This year's Bird records showed a marked change from the previous season with few nesting birds present. The Whitethroat population in particular had no nesting birds, so that work prepared to continue from the previous year, to investigate range of territory, food supplies and nesting behaviour, was not done. A pair of reed buntings were only under observation for two days before the nestlings were fledged and left the nest. The ringed plovers, tame as ever, failed with their nesting because of the tides, and it was not until the second week that a pair of meadow pipits were discovered on the saltings and were still sitting tight, when we had to pack up and leave.

The mammal trapping and recording proved again to be one of the most popular activities. The growing record of investigations of varied habitats is evidence of this. Students have an increasing number of questions to answer raised from the information they have accumulated. The most excited group was the one that returned with a weasel, instead of the usual catch of voles or mice.

The moth and butterfly recording was comparatively limited this year, since the weather conditions reduced the number of species found. Nevertheless those concerned produced valuable records and an interesting display.

Botanical studies received a boost this year. A transect was made on the north cliff face, and this was staked in order to allow continuing records to be kept. The display, which was the work of one student, shows a very promising start.

The pond studies carried out by an enthusiastic group of boys under the supervision of Mr. James in the second week developed from the "What's in a Habitat?" programme. The mapping of the pond will allow for continued investigation and recording. It will be interesting to watch the population changes following the drought conditions of the previous Whitsun.

Fishing came into its own in the second week. The careful work exhibited in the display is indicative of the enthusiasm of those concerned with this topic. Mrs. Gaskin, who unfortunately was not fit enough to be with us this year, will be pleased with the careful mapping of the *Zostera* beds.

A new departure this year is seen in the study of Brickfield Cottage, with a steady mass of information being compiled about the history of its inhabitants and the use of the brickworks.

The work on erosion and the development of ant-hills was again under the expert guidance of Oliver Frazer, whose contribution in encouraging and helping at all stages is always invaluable.

The recreative side of camp was not overlooked, with many students learning to row and sail. Our thanks are due to Miss Williamson for her contribution in coaching the sailors.

As usual we are indebted to Mr. Long for hauling equipment to and from camp, and to Mr. Ablitt also, for allowing access over his fields.

Finally I must record the significant part played by Miss Mattin in the preparation, execution and final presentation of the work completed this year at Newtown, and also the unfailing support, encouragement and expertise of the Warden of the Newtown Local Nature Reserve, Mr. Pat Ewbank.

LOCAL LOOK REPORT FOR 1977

By Mrs. K. Wadham

Our seventeenth consecutive Local Look Exhibition, with its dull-sounding theme of "Sand and Gravel", was in fact far from dull and was very well received by interested spectators, who are again increasing in numbers to a total this year of 7,500.

The takings also were up to their highest level yet, and the Local Look Committee were able to send £5 to the C.P.R.E., who had no collecting box this year. The National Trust and R.S.P.B. collections were rounded up to £10 each, which was also the amount collected by the R.S.P.C.A., and the Jubilee collecting box was increased to £5.

Stewards were fewer in number, but they were again very generous in their offers of help, so that most periods of duty were covered by three or four members. I am very grateful to them for their speedy replies to my appeal.

I must also thank the friends, who supplied us with sales goods, producing a good profit for the Society – Mr. R. Snow for delightful sand-pictures and Mr. R. McInnes for rock collections, while polished stones, iron pyrites and pieces of turtle plate, collected by members, were all pure profit.

We have made a good profit too on our much-admired Dixon postcards, which were all bought and paid for several years ago, and, taking the advice of Mr. Addison of Dixons, I have purchased sets of cards already for next year, as they are again going up in price. The new Collecta Cards are both beautiful and profitable.

So far I have only written on the business side of Local Look, and have not mentioned the displays themselves, but I am sure that we all learned a great deal from the interesting facts produced by the sections – how our sands and gravels were made, their age and how they are excavated and used in the modern world. We saw that early man, with his primitive stone weapons, settled on the sandy areas in the south, rather than on the heavy clay of the north of the Island; that sand has its own typical plant life, as can be seen in such places as St. Helens; that shingle too has particular features that are well shown at Hamstead. Sand is also the home of such diverse animals as the badger, fox, reptiles, grasshoppers and the sand wasp, whose life history was depicted in a much-admired diorama, while the kingfisher and sand martin both nest in sandy banks. We saw, too the wonderful camouflage of birds which nest on the shingle, the composition of a beach and how the creatures to be found there have adapted to their environment. I am sure that we will all be much more observant in the future, when we are out walking.

There were many admiring comments on this year's display, and the only real problem was the failure of the electric fan. As this had been borrowed from Mr. S. Eade over a period of years, I feel we should now purchase one of our own, as it is essential on a hot and crowded day. We might then allow Mr. Eade to borrow ours, in return for his generosity over the years.

AN INTERESTING MOTH ON AN INTERESTING FOODPLANT

By R. Dickson

A Devon entomologist tells me that the pyralid moth *Mecyna asinalis* (Hubner) is "dirt common" on his coast. That certainly isn't the case here. The species is unknown on mainland Hampshire. On the Island it is confined to the South coast, and further by the limited distribution of its sole foodplant, Madder, *Rubia peregrina* (L.).

Madder is a distinctive plant, looking rather like a heavy-duty goosegrass. The leaves are dark green and shiny above. Below, around the edges and along the main rib, are backwards directed spines which grapple efficiently with clothing. Only, unlike goosegrass which merely clings, Madder can be released by simply pushing the leaf in the reverse direction just as you would unhook yourself from a rose or bramble. The pigment Rose Madder is obtained from it, and used in artists' paints (some leaves turn deep crimson in autumn) and also as a vital stain in the study of bone growth. It has the property of being deposited wherever new bone is being laid down. So you can produce a long-bone with pink rings on it by feeding Madder intermittently to a growing animal. It has a patchy distribution on the Island, occurring well inland – on the edge of Parkhurst Forest for example.

The moth, which I have yet to see live, is of about an inch wingspan and attractively marked in an unusual smooth slate colour. It is said to be very retiring, coming to light after dark, but during the daytime it hides in dense cover, and if disturbed it releases its hold and tumbles further into the herbage rather than fly. It has been found throughout summer in what could be a confusion of broods or a single protracted emergence.

I first met the species last summer, having been tipped by a colleague that the Madder around Ventnor had been extensively eaten by something. When I visited, I found unmistakable evidence of the species, as given in the text-books: a great deal of silk had been spun around the foodplant, to which adhered a quantity of droppings. A point the text-books don't mention is that at this time of year the larvae eat only the lower cuticle and green tissue inside the leaf, leaving a "window" of clear upper cuticle. Larvae were easy to find, hiding in silken tubes amongst the growth, often between two leaves spun together to form a "pod".

This highly characteristic pattern we saw again at Yarmouth, on the old railway line towards Freshwater, but a thorough search of the plants referred to at Parkhurst revealed nothing. There are old records for the south-east coast – Bembridge (Lobb, Proc. I.O.W.N.H.S. 1955: 374), but I have not had chance to follow it up there. Perhaps members might bear it in mind when they visit the coast – and report to the Editor or myself!

I was pessimistic about my ability to keep the larvae through the winter and hibernation, and so took only three. The foodplant lasts for weeks in water, and one larva did quite well for almost two months, reaching a fair size before expiring.

This spring I returned (on 19th April) in the hopes of finding larvae out of hibernation, which would be much easier to rear. It was immediately apparent that there were no "windows" in the leaves of the new growth, but on closer examination nearly every shoot had been eaten, and I soon found some droppings of a fair size. The larvae

were eating in the approved caterpillar fashion, that is consuming the leaf from the periphery, leaving a concave edge. They also ate as a man eats asparagus – devouring the entire tender young growing point until it became too tough for them. There was, however, no evidence of silk, which had been so apparent the previous autumn, and where were the larvae?

In vain I searched for leaves spun together on the new growth. Eventually I found some Madder growing up through overhanging ivy, and tapped it over a sheet. Amongst a veritable deluge of dead twigs and leaves I found two larvae, and, whilst removing the debris piece-meal, I came across a larva in a silk tube between the now brown, dead and brittle leaves of a year or more ago! Encouraged by this unexpected clue, I searched more spun dead Madder leaves, and at length found a further larva. This was very hard work! It involved peering into the depths of the vegetation, and as I reached in to retrieve my find the Madder clung to my sleeve, disturbing the growth and often causing the leaves in question to fall off and out of sight – they were barely attached. It proved easier to beat the growth over a sheet and examine the dead leaves that fell off. This way I added a further six larvae, but it was distressing to think of the number beyond counting that were in there – somewhere. The last straw came when, beating a growth of Madder amongst blackthorn, a Brown-tail larva fell onto the sheet – they cause a singularly unpleasant rash! It occurred to me that if the larvae were using dead leaves, it made but little difference to them whether they were Madder leaves or not. Indeed, in many ways the leaves of their foodplant were rather unsuitable. They were stiff and brittle, small, and fell off without provocation to finish up on the ground and a long way from a square meal. The Madder almost invariably grows up through something, and the “something” often has much more suitable dead leaves on it. Immediately I found a larva in the rolled edge of a dead ivy leaf, some several inches away from fresh foodplant, rapidly followed by a plump larva ensconced in a dead bramble leaf. From then it took me mere minutes to bring my complement of larvae to a healthy number (I had been working solidly for three hours).

As I walked back toward Ventnor I spied a crumpled dead sycamore leaf trapped in ivy amongst which Madder was growing. “Aha”, quoth I, “There must be an *asinalis* larva in there”. I was wrong. There were four.

OBSERVATIONS ON THE MACROFAUNA OF INTER-TIDAL SANDS AT RYDE AND BEMBRIDGE, ISLE OF WIGHT

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Summary

The intertidal sand-dwelling macrofauna of beaches at Ryde and Bembridge, Isle of Wight, was quantitatively sampled during spring 1977. A total of 62 invertebrate species was recorded, 57 at Ryde and 31 at Bembridge. Above M.L.W.N. at Ryde 39 species were recorded from the fine (Median particle diameter 150-250 μ m) and generally well sorted sand. Although *Hydrobia ulvae* (Pennant) was abundant at one locality and amphipods were generally common, the dominant species overall was *Arenicola marina* (L.). Below M.L.W.N. at Ryde Pier a considerable bed of eel grass, *Zostera* spp. was discovered again on fine sand and of all sites sampled in this survey this supported the most diverse (41 species) and abundant fauna. Amphipods were again numerous but the dominant animal was *Lanice conchilega* (Pallas). Only two species of lamellibranch were found and neither was especially common. At Bembridge a considerable area of stable fine sand occurred on the mid and upper shore and this was inhabited by 31 different species. *A. marina* again being dominant. On the lower shore at Bembridge sand occurred only in patches between the reefs. It appeared poorly sorted and somewhat gravelly and was inhabited by only 13 species, mostly amphipods and small polychaetes.

Introduction

Within the Solent, investigations into the macrobenthos of particulate shores have been mainly concerned with muddy sediments and, apart from the old records of Anon (1900) and Morey (1909), only Goodhart (1941), Anon (1976) and Withers & Thorp (1978) have presented data on sand-dwelling species. This paper concerns the macrofauna inhabiting Ryde Sands, on the north-east coast of the Isle of Wight, and the sands occurring amongst the rock reefs at Bembridge on the Island's eastern coast.

Methods

Two areas of Ryde Sands were sampled on 28th March, 1977; the first (Site 1, grid reference SZ 605925) was about 1250 m east-south-east of Ryde pier, and the second (Site 2, grid reference SZ 593930) about 50 m west of the pier. At Site 1, samples were collected at six stations along each of two transect lines running from M.H.W.N. to M.L.W.N. normal to the shoreline and 100m apart, and at 24 stations sited randomly, using random number tables, within a 100 x 100 m square arbitrarily positioned on the sandflats between M.T.L. and M.L.W.N. At Site 2, nine stations were sampled along a single transect which again ran normal to the shoreline from M.H.W.N. to M.L.W.N. and further samples were collected in April, 1977, from between M.L.W.S. and E.L. W.S. both along this transect and up to 200m to the east of Ryde pier.

At Bembridge, samples were collected from four stations between M.T.L. and M.L.W.N. below Foreland Field (grid reference SZ 654871) and from a further two at M.L.W.S. in The Run (grid reference SZ 660871).

Samples of the infauna were obtained by pushing a tubular, plastic corer (cross sectional area approximately $1/60\text{m}^2$) into the sand to a depth of 25 cms. At least two cores were collected at each station except at those chosen randomly at Site 1. The sediment from the corer was washed through 1 mm (transect samples from above M.L.W.N.) or 0.5 mm (other samples) mesh sieves and the debris and organisms thus retained were sorted and identified in the laboratory. Additional estimates of the distribution of the polychaetes *Arenicola marina* (L.) and *Lanice conchilega* (Pallas) were obtained by observing the occurrence on the sand surface of casts and tubes, respectively, using a 0.25 m^2 quadrat, a ratio of one individual to one cast/tube being assumed. At each station except those chosen randomly at Site 1, about 0.5 m^2 of beach was dug and roughly sorted to give an additional estimate of the abundance of the larger, more sparsely distributed species such as *Nephtys* spp. and bivalve molluscs.

At each station, the nature of the substratum was described in relation to the Wentworth Scale and, at several, sediment samples were taken for subsequent particle size analysis by dry sieving (Holme & McIntyre, 1971). These analyses provided data on median diameter (Md), degree of sorting (QD) and degree of skewness (Skq). In addition, data were collected at each station concerning the packing of the sediment and the depth of both the water table and the sulphide layer.

Results

Physical data

Site 1. The first 40 m of the shore below the promenade sloped relatively steeply and consisted of a stony gravel. Between M.H.W.N. and M.T.L. the gravel gave way to sandflats which extended for 600 m to M.L.W.N., as an irregular series of shallow gullies and banks running almost parallel to the shore.

The sand was generally fine and well sorted (Md $2.04 - 2.59\ \phi$ (245 - 165 μm), QD ϕ $0.31 - 0.36$, Skq ϕ $-0.03 - -0.04$), with the coarsest sediment occurring on the most shoreward banks. Especially on one transect, a considerable volume of somewhat brackish water (salinity $22 - 28\text{‰}$) flowed out of sand near the top of the shore and ran away along the first gully as a small stream. In the subsequent gullies, the water table again reached the surface although the salinity was never less than 31‰ while on the banks the depth of the water table ranged from 3 - 25 cms. The sulphide layer occurred at depths ranging from 5 cms in the gullies to 25 cms on the banks.

Site 2. The sandy beach began immediately below the promenade and extended in a smoothly decreasing slope through M.L.W.N., about 250 m seawards, to E.L.W.S. some 500 m beyond the promenade. Above M.L.W.N., the sand was fine and well sorted (at M.H.W.N. - M.T.L., Md = $2.44\ \phi$ [185 μm], QD ϕ = 0.23 and Skq ϕ = -0.03 ; at M.T.L. - M.L.W.N., Md = $2.38\ \phi$ [193 μm], QD ϕ = 0.25 and Skq ϕ = $+0.04$); the water table always within 7 cms of the surface and the sulphide layer at a depth of 3-9 cms. The salinity of the interstitial water ranged from $30.5 - 33\text{‰}$ except in the area of maximum outflow of the water table onto the beach surface, about 90 m beyond the promenade, where a level of 25‰ was recorded.

Below M.L.W.N. the sand became finer and remained well sorted (at E.L.W.S. Md = $2.64\ \phi$ [164 μm], QD ϕ = 0.28 and Skq ϕ = -0.05). The surface was flooded, sometimes to a depth of 5 cms, and the sulphide layer, which was never very distinct,

generally lay at a depth of 3-5 cms. Scattered clumps of *Zostera nana* Roth appeared around M.L.W.N. and became common by M.L.W.S. Around E.L.W.S. the species achieved a 50-70% cover to the west of the pier and 70-90% to the east. *Z. marina* L. was also present below M.L.W.S. in small patches which were easily discernible even at a distance by their brighter green colour compared to the dark green of *Z. nana*.

Bembridge. The sediments near M.L.W.S. in The Run consisted of poorly sorted medium sand but above M.L.W.N. they were finer and better sorted although silt remained plentiful.

Faunistic data

The 62 species recorded in this survey are listed in Appendix 1.

Site 1. A total of 960 individuals, comprising 27 species, were recorded from the two transects. An average of 17 animals per core occurred overall on the two transects although, because some hundreds of *Hydrobia ulvae* (Pennant) were found at two sites on one transect, the majority of stations averaged only eight animals per core. The 24 core samples collected at random at Site 1 contained 1453 animals, an average of 60 per core. Again, however, these figures are distorted by the presence of about 500 *H. ulvae* at each of two stations and if *H. ulvae* is ignored then only 250 animals were collected, an average of 10/core.

H. ulvae and *Neanthes* (= *Nereis*) *diversicolor* (Müller) occurred in association with the brackish water outflow at the base of the shingly upper shore. *H. ulvae* was abundant in a few cores, with maxima of 180/core (10,000/m²) in the transect samples and 500/core (28,000/m²) in the random samples, but scarce elsewhere. *N. diversicolor* was recorded only at the uppermost transect stations with a maximum density of 4/core (240/m²).

Arenicola marina reached maximum abundance (32/m²) near the top of the sandflats, where the population consisted almost solely of juveniles, while at lower stations adults were generally present but less abundant (2-4/m²). Newell (1948) has suggested that juvenile *A. marina* migrate down shore as they grow. Only 2 other polychaetes were common in the transect samples, *Scoloplos armiger* (Müller) and *Spio filicornis* Müller. The former was found at the majority of stations (maximum density 10/core, 600/m²) but the latter was neither as numerous nor widespread (maximum density 3/core, 180/m²). Both appeared to prefer the wetter more anaerobic sediments.

Only 3 crustaceans, all amphipods, were regularly present in the transect samples. *Bathyporeia sarsi* Watkin was ubiquitous (maximum density 4/core 240/m²) but *Urothoe brevicornis* Bate (maximum density 5/core, 300/m²) preferred the cleaner more exposed sand on the top of the sandbanks and *U. grimaldii* Chevreux var. *poseidonis* Reibisch (maximum density 15/core, 900/m²) the more sheltered, silty sand of the gullies.

Hydrobia ulvae, *Bathyporeia sarsi* and *Scoloplos armiger* occurred in 86, 86 and 77% of the randomly collected core samples, respectively. Among the other species only *Spio filicornis* (32%) *U. grimaldii* var. *poseidonis* (32%), *Arenicola marina* (22%), *Tanaissus lilljeborgi* (Stebbing) (22%) and *Loripes lucinalis* (Lamarck) (22%) were present in more than 20% of these samples.

Site 2. Between M.H.W.N. and M.L.W.N. 633 animals belonging to 26 species were recovered from 16 cores, an average of 39/core. The dominant polychaetes were *Arenicola marina*, *Lanice conchilega* and *Scoloplos armiger*. As at Site 1, juvenile *A. marina* were very common near the top of the beach (maximum density 35/m²)

while adults decreased in density (16-2/m²) downshore to M.L.W.N. *L. conchilega* and *S. armiger* were numerous from above M.T.L. downwards with maximum densities of 55 and 960/m² (16/core), respectively. Among the other polychaetes, *Scolecopsis squamata* (Müller) occupied a narrow zone at and above M.T.L. with a maximum density of 2/core (120/m²) while *Euclymene oerstedii* (Claparède), *Eteone longa* (Fabricius) and *Pygospio elegans* Claparède were frequently collected at and below M.T.L. (maximum densities 4/core, 240/m²; 3/core, 180/m²; and 2/core, 120/m², respectively).

Urothoë grimaldii var. *poseidonis* and *Bathyporeia sarsi* were the dominant crustaceans above M.L.W.N.; the former was found from above M.T.L. and reached exceptional densities on the mid-shore (maximum density 95/core, 5700/m²); the latter was similarly widespread but much less abundant (maximum density 7/core, 420/m²). *Corophium arenarium* Crawford was also recorded at a number of midshore stations but densities did not exceed 2/core (120/m²).

In the *Zostera* bed lying below M.L.W.N. at Site 2, six stations were sampled and a total of 16 cores taken. 1282 animals belonging to 41 species were collected, an average of 80 individuals/core. Although smaller polychaetes showed higher frequencies of occurrence than *Lanice conchilega* (62%) in the sixteen cores, the relatively large size and considerable abundance of adult *L. conchilega* ensured that in terms of biomass it was the dominant animal in the *Zostera* bed. Greatest abundance (22/core, 1320/m²) occurred amongst the *Zostera* roots but the species was also common in the few patches of *Zostera*-free sand. Two small polychaetes, *Spio filicornis* (maximum density 32/core, 1920/m²) and *Pygospio elegans* Claparède (maximum density 79/core, 4740/m²) occurred in 100 and 94% of the cores, respectively. Other polychaetes with occurrence frequencies >50% were *Euclymene oerstedii* (Claparède) (87%; maximum density 7/core, 420/m²), *Scoloplos armiger* (74%; 5/core, 300/m²), *Clymenura clypeata* (Saint-Joseph) (62%; 4/core, 240/m²) and *Nephtys cirrosa* Ehlers (56%; 2/core, 120/m²).

With the exception of the tanaid *Tanaissus lilljeborgi* which was found in 62% of the cores (maximum density 10/core, 600/m²), amphipods were the dominant crustacean group in the *Zostera* bed. *Urothoë grimaldii* var. *poseidonis* was the commonest, being present in 62% of the samples (maximum density 18/core, 1080/m²) but 7 other amphipods showed a frequency of occurrence in the cores of >30%. These were, in order of descending frequency, *Microprotopus maculatus* Norman (56%; maximum density 13/core, 789/m²), *Bathyporeia guilliamsoniana* (Bate) (50%; 4/core, 240/m²), *Ericthonius brasiliensis* Dana (50%; 11/core 660/m²), *Perioculodes longimanus* (Bate & Westwood) (50%; 6/core, 350/m²), *Leucothoë incisa* Robertson (44%; 6/core, 350/m²), *Pontocrates arenarius* (Bate) (44%; 3/core, 180/m²) and *Ampelisca brevicornis* (Costa) (31%; 2/core, 120/m²).

Bembridge. Six stations were investigated at this beach and a total of 15 cores were taken. 758 animals belonging to 31 species were recovered from these cores, an average of 51/core. Above M.L.W.N. there were large areas of sandy shore supporting a moderately rich fauna (24 species) but towards M.L.W.S. sand existed only in patches among rock reefs and its fauna was poorer (13 species). In biomass terms *Arenicola marina* dominated the stable sand of the upper and middle shore although amphipods were numerically dominant. Juvenile *A. marina* reached densities of 50/m² at the top of the species' range and adults occurred in decreasing abundance down to M.L.W.N. Capitellid polychaetes were also common (maximum density 28/core, 1680/m²) while *Spio filicornis* was frequently recorded in small numbers (maximum density 4/core, 240/m²). No other polychaete was regularly present in the middle and upper shore cores

although a further 10 species were found occasionally. The dominant crustaceans above M.L.W.N. were the amphipods *Urothoe grimaldii* var. *poseidonis* (maximum density 39/core, 2340/m²) and *Bathyporeia sarsi* (maximum density 77/core, 4620/m²) but the following were also regularly taken: *Bathyporeia guillaimsoniana* (Bate) (maximum density 3/core, 180/m²), *B. nana* Toulmond (3/core, 180/m²), *B. pelagica* (Bate) (3/core, 180/m²), and *B. pilosa* Lindström (5/core, 300/m²).

The sands near M.L.W.S. at Bembridge contained a sparse fauna. *A. marina* was absent and of the 7 polychaete and 6 crustacean species found in the cores, only *Malacocerus tetracerus* (Schmarda) (maximum density 3/core, 180/m²), *Notomastus* sp. (2/core, 120/m²) and *B. elegans* (5/core, 300/m²) reached densities >1/core.

Discussion

During the survey only one species, the small crustacean *Tanaissus lilljeborgi* seemed to be seriously underestimated by the use of a 1.0mm as opposed to 0.5 mm sieve. At Site 1 no *T. lilljeborgi* were recovered from cores taken at the transect stations, which were passed through a 1 mm mesh, while 22% of the randomly collected Site 1 samples, which were sieved on a 0.5 mm mesh, contained *T. lilljeborgi*. Although such small species have little significance in the overall invertebrate biomass of a beach, their accurate estimation is important in a consideration of food chains and in the calculation of faunal indices such as diversity. In the field, however, the use of finer sieves requires more time and effort, especially on poorly sorted sediments, and may, therefore, limit the scope of a survey. The final choice of mesh size depends on balancing the field work practicalities against the aims of the particular study.

At Ryde exposure is greater at Site 1 than at Site 2. Using the terminology given by Ballantine (1961, p.14), which has been applied to sandy shores by Withers (1977) neither site rates more exposed than "fairly sheltered" with respect to wave action, although the strong Solent tides probably exacerbate the exposure of both sites. At Site 1 the considerable brackish water run off from the top of the shore introduces a locally important estuarine element to the fauna (*Hydrobia ulvae* and *Neanthes diversicolor*). Together with the variety of sedimentary conditions produced by the undulating nature of the sandflats, this results in the occurrence of a fairly diverse but, with local exceptions, numerically sparse fauna. At Site 2, above M.L.W.N., the more uniform shore is colonised by a less diverse, but numerically richer, fauna while below M.L.W.N. in the *Zostera* bed, both faunal diversity and numerical abundance are at their highest.

At Bembridge the fine silty sand above M.L.W.N. contained a fauna very similar to that found above M.L.W.N. at Ryde. Of the 24 species recorded from this region at Bembridge, only *Clymenura clypeata*, *Bathyporeia nana* and *Lucinoma borealis* (L.) (exclusive to Bembridge) were absent above M.L.W.N. at Ryde. Around M.L.W.S. the faunal similarity with Ryde diminished probably because of the poorly sorted nature of the sediment and four species, three of which were polychaetes, were exclusive to this locality.

The fauna of Ryde Sands appears more diverse than that recorded for sandbanks in the vicinity of Langstone Harbour (Withers & Thorp, 1978) since 57 species were found at Ryde and 49 at Langstone. Eighteen of the Ryde species, mostly amphipods, occurred only in the *Zostera* bed around M.L.W.S., a sub-habitat absent from the Langstone sandbanks but present at muddier sites within the Harbour. Sampling in Hayling Bay, close to the East Winner sandbank, revealed that, although absent intertidally on the sandbanks, many of the amphipods recorded from the Ryde

Zostera bed were also present sublittorally near Langstone Harbour on *Zostera*-free sand.

A more detailed comparison of the fauna of Langstone Harbour sandbanks with that of Ryde Sands shows that on the sandbanks diversity was lower amongst polychaetes (especially tubicolous species) and amphipods but higher amongst other crustaceans, especially decapods. The numbers of lamellibranch species recorded in the two surveys were similar but only two were common to both, and the most widespread species at Ryde and Bembridge, *Loripes lucinalis*, has yet to be recorded from Langstone.

Puzzling features of not only the Ryde and Bembridge shores but also of other intertidal sand exposures in the Solent are the low diversity of their mollusc and echinoderm faunas. Many typical sandy shore species are peculiarly scarce in the Solent and while some seem to have been rare for some time others have been reduced only in more recent years. For example, Morey (1909) recorded no *Tellina tenuis* da Costa and but single specimens of *T. fabula* Gemlin and *Echinocardium cordatum* (Pennant) for the whole of the Isle of Wight, although he does list 22 other bivalves including *Ensis* spp., *Solen marginatus* Montagu, *Donax vittatus* da Costa, *Spisula* spp. and *Mactra corallina* (L.) as occurring on Ryde Sands. Data collected by Juniper (1963) indicated that intertidal (and sublittoral?) populations of *Ensis* spp. and *Solen marginatus* in the vicinity of Hayling Island were decimated by the severely cold winter of 1962/63. Despite the presence, sublittorally, of considerable numbers of these and other generally common species, including *E. cordatum*, to the east and west of the Solent (Holme, 1966; Cabioch, pers. comm.) Withers and Thorp (1978) found only a single juvenile *S. marginatus* in Langstone Harbour between 1974 and 1976. Neither has this study produced any evidence for the presence of *Ensis*, *Solen* or the other previously mentioned species at Ryde or Bembridge, although a few old *Solen* shells were discovered at Ryde and a single live *E. ensis* (L.) was found on the mid-shore at Whitecliff Bay, just south of Bembridge. Since the 1962/63 winter, the only other local records of the above mentioned species known to the author are: a single *T. tenuis* at Aldwick Sands, Bognor Regis, in 1973 (personal observation); *E. siliqua* (L.) sublittorally at Stanswood Bay in 1973 (J. Coughlan, pers. comm.); *T. fabula*, *Spisula solida* (L.) and *Solen* spp. in Chichester Harbour (Stubbings & Houghton, 1964) (despite the publication date these records may in fact refer to the years immediately preceding the 1962/63 winter).

Acknowledgements

I would like to thank all the marine biology students from the Department of Biological Sciences, Portsmouth Polytechnic, who carried out much of the field work necessary to this survey during their Easter 1977 field course. I am also very grateful to Dr. C. H. Thorp and Dr. M. B. Culley for assistance both in the field and with preparation of the manuscript.

Appendix 1. Species List.

- Key: 1 Ryde beach, Site 1, 1250 m east-south-east of Ryde Pier between M.H.W.N. and M.L.W.N.
 2 Ryde beach, Site 2, 50 m west of Ryde Pier between M.H.W.N. and M.L.W.N.
 2a Ryde beach, Site 2, from 50 m west to 250 m east of Ryde Pier, in *Zostera* bed lying between M.L.W.N. and M.L.W.S.
 3 Bembridge, between M.T.L. and M.L.W.S. in sand south of Foreland Point.

Nomenclature: Polychaetes as Hartman (1959; 1965), Pettibone (1963) and Day (1967); amphipods as Barnard (1958); bivalves as Tebble (1966) and Boyden & Russell (1972); all other species as in the Plymouth Marine Fauna (Marine Biological Association, 1957).

Species	■ present		— absent		
	1	2	2a	3	
NEMERTINI sp.	■	■	■	■	
ANNELIDA: Polychaeta					
<i>Anaitides maculata</i> (L.)	—	—	■	—	
<i>Arenicola marina</i> (L.)	■	■	■	■	
<i>Aricidea</i> sp.	—	—	■	—	
<i>Capitella capitata</i> (Fabricius)	■	■	■	■	
<i>Capitellides giardi</i> Mesnil	■	■	■	■	
<i>Cirriformia tentaculata</i> (Montagu)	—	—	—	■	
<i>Clymenura clypeata</i> (Saint-Joseph)	—	—	■	■	
<i>Eteone longa</i> (Fabricius)	—	■	■	■	
<i>Euclymene oerstedii</i> (Claparède)	■	■	■	—	
<i>Eumida sanguinea</i> (Oersted)	—	—	—	■	
<i>Glycera convoluta</i> Keferstein	—	—	—	■	
<i>Lanice conchilega</i> (Pallas)	■	■	■	■	
<i>Malacocerus tetracerus</i> (Schmarda)	■	■	■	■	
<i>Neanthes diversicolor</i> (Müller)	■	—	—	—	
<i>Nephtys caeca</i> (Fabricius)	—	—	■	—	
<i>N. cirrosa</i> Ehlers	■	■	■	■	
<i>N. hombergii</i> Savigny	■	■	■	—	
<i>Notomastus</i> sp.	—	—	—	■	
<i>Ophelia rathkei</i> McIntosh	■	—	—	—	
<i>Owenia fusiformis</i> delle Chiaje	—	■	—	—	
<i>Paraonis fulgens</i> (Levinsen)	■	—	—	—	
<i>Pygospio elegans</i> Claparède	■	■	■	■	
<i>Scolelepis foliosa</i> (Audouin & Milne-Edwards)	—	■	—	—	
<i>S. squamata</i> (Müller)	■	■	—	—	
<i>Scoloplos armiger</i> (Müller)	■	■	■	■	
<i>Spio filicornis</i> (O. F. Müller)	■	■	■	■	
<i>Spiophanes bombyx</i> (Claparède)	—	—	■	—	
Oligochaeta					
<i>Peloscolex benedeni</i> Udekem	—	—	■	—	

Species	■ present	— absent			
		1	2	2a	3
CRUSTACEA: Isopoda					
<i>Cyathura carinata</i> (Kroyer)	—	—	—	—	■
<i>Eurydice pulchra</i> Leach	■	—	—	—	—
Tanaidacea					
<i>Tanaissus lilljeborgi</i> (Stebbing)	■	—	—	■	■
Amphipoda					
<i>Ampelisca brevicornis</i> (Costa)	—	—	—	■	—
<i>Atylus swammerdami</i> Milne-Edwards	—	—	—	■	■
<i>Bathyporeia elegans</i> Watkin	■	—	—	—	■
<i>B. guilliamsoniana</i> (Bate)	■	■	—	■	■
<i>B. nana</i> Toulmond	—	—	—	■	■
<i>B. pelagica</i> (Bate)	■	—	—	—	■
<i>B. pilosa</i> Lindström	—	■	—	■	■
<i>B. sarsi</i> Watkin	■	■	—	■	■
<i>Caprella</i> sp.	—	—	—	■	—
<i>Corophium arenarium</i> Crawford	■	■	—	—	—
<i>C. crassicorne</i> Bruzelius	—	—	—	■	—
<i>Erichthonius brasiliensis</i> Dana	—	—	—	■	—
<i>Gammarellus angulosus</i> (Rathke)	—	—	—	■	—
<i>Gammarus</i> sp.	—	■	—	■	—
<i>Leucothoe incisa</i> Robertson	—	—	—	■	—
<i>Microportopus maculatus</i> Norman	—	—	—	■	—
<i>Perioculodes longimanus</i> (Bate & Westwood)	—	—	—	■	—
<i>Pontocrates arenarius</i> (Bate)	—	—	—	■	—
<i>Urothoë brevicornis</i> (Bate)	—	■	—	—	■
<i>U. grimaldii</i> Chevreux var. <i>poseidonis</i> Reibisch	■	■	—	■	■
Cumacea					
<i>Cumopsis goodsiri</i> (Van Beneden)	■	■	—	■	■
<i>Iphinoë trispinosa</i> (Goodsir)	■	—	—	■	—
Decapoda					
<i>Carcinus maenas</i> (L.)	■	—	—	■	—
MOLLUSCA: Gastropoda					
<i>Hydrobia ulvae</i> (Pennant)	■	■	—	—	—
Lamellibranchia					
<i>Cardium</i> [<i>Cerastoderma</i>] <i>edule</i> L.	■	—	—	■	■
<i>Loripes lucinalis</i> (Lamarck)	■	■	—	■	■
<i>Lucinoma borealis</i> (L.)	—	—	—	—	■
<i>Macoma balthica</i> (L.)	—	■	—	—	—
<i>Venerupis pulestra</i> (Montagu)	■	—	—	—	—
ECHINODERMATA: Ophiuroidea					
<i>Amphipholis squamata</i> (Delle Chiaje)	■	—	—	—	—

References

- ANON (1900). *The Victoria History of the counties of England I. Hampshire and the Isle of Wight*. Constable, Westminster.
- ANON (1976). *Langstone Harbour Study: The effect of sewage effluent on the ecology of the Harbour*. Report commissioned by the Southern Water Authority. Publ. Portsmouth Polytechnic. 356 pp.
- BALLANTINE, W. J. (1961). A biologically-defined exposure scale for the comparative description of rocky shores. *Fld. Studies* 1, No. 3, 1-19.
- BARNARD, J. L. (1958). Index to the families, genera and species of the gammaridean Amphipoda (Crustacea). *Allan Hancock Foundation Publications, Occasional Paper* 19, 1-145.
- BOYDEN, C. R. AND RUSSELL, P. J. C. (1972). The distribution and habitat range of the brackish water cockle (*Cardium [Cerastoderma] glaucum*) in the British Isles. *J. Anim. Ecol.* 41, 719-734.
- DAY, J. H. (1967). *A monograph on the Polychaeta of southern Africa. Part 2. Sedentaria*. British Museum (Natural History) London, publication no. 656, 459-878.
- GOODHART, C. B. (1941). The ecology of the Amphipoda in a small estuary in Hampshire. *J. Anim. Ecol.* 10, 306-321.
- HARTMAN, O., 1959. Catalogue of the polychaetous annelids of the world. Parts I and II. *Allan Hancock Foundation Publications, Occasional Paper* 23, 1-628.
- HARTMAN, O. (1965). Catalogue of the polychaetous annelids of the world. Supplement 1960-1965 and index. *Allan Hancock Foundation Publications, Occasional paper* 23, 1-197.
- HOLME, N. A. (1966). The bottom fauna of the English Channel. Part II. *J. mar. biol. Ass. U.K.* 46, 401-493.
- HOLME, N. A. AND MCINTYRE, A. D. (1971). *Methods for the study of marine benthos* I. B.P. Handbook No. 16. Blackwell, Oxford. 334 pp.
- JUNIPER, A. J. (1963). *A survey of the intertidal fauna of the Portsmouth area* M.Sc. Thesis. University of Durham. 102 pp.
- MARINE BIOLOGICAL ASSOCIATION, (1957). *Plymouth Marine Fauna* 3rd Edition 457pp.
- MOREY, F. (1909). *A guide to the natural history of the Isle of Wight*. Newport and London. 560 pp.
- NEWELL, G. E. (1948). A contribution to our knowledge of the life history of *Arenicola marina* (L). *J. mar. biol. Ass. U.K.* 27, 554-580.
- PETTIBONE, M. H. (1963). Revision of some genera of polychaete worms of the family Spionidae, including the description of a new species of *Scolecopsis*. *Proc. biol. Soc. Wash.* 76, 89-104.
- STUBBINGS, H. G. AND HOUGHTON, D. R. (1964). The ecology of Chichester Harbour, S. England, with special reference to some fouling species. *Int. Revue gen. Hydrobiol.* 49, 233-279.
- TEBBLE, N. (1966). *British bivalve seashells* London, British Museum (Natural History), 212 pp.
- WITHERS, R. G. (1977). Soft-shore macrobenthos along the south-west coast of Wales. *Estuar. cstl. mar. Sci.* 5, No. 4, 467-484.
- WITHERS, R. G. AND THORP, C. H. (1978). The macrobenthos inhabiting sandbanks in Langstone Harbour, Hampshire. *J. nat. Hist.* 12, 445-455.

OBSERVATIONS CONCERNING BLOODSTONE WELL, ASHEY

By C. R. Pope

Bloodstone Copse is a small coppice wood on the north side of Ashley Down alongside the Ashley Waterworks. It owes its name to a spring which arises in the wood and flows north to Ryde. This spring has long been known as Bloodstone Well on account of 'the uncommon, if not singular incrustation on the pebbles and flints which lie in its bed, and which are partially covered by a thin coating of a colour when wet exactly resembling large spots of blood' (Englefield, 1816). A claim is made by Bradbury (1874) of a local tradition that the hill was the scene of a skirmish between the Danes and Saxons when so many were slain that their blood ran down and mingled with the waters, thereby colouring the stones.

Englefield (1816) appears to have been the first person to provide a plausible explanation of the phenomenon. He describes the appearance of the stones in some detail and concludes, 'this incrustation is of a vegetable nature, and is probably nearly allied to the *Byssus purpureus* or *iolithus*, though not exactly answering to the descriptions of either'. Both of these old scientific names refer to encrusting red algae. *Byssus purpureus* is now known as *Audouinella (Rhodochorton) purpurea* and is a velvety filamentous growth occurring in marine spray zones; *B. iolithus* means violet (*io*) stone (*lithus*) and is now known as *Trentepohlia*, also a velvety filamentous growth but a terrestrial alga growing in damp places. Neither of these names applies to the encrustations in question.

The stream has now been dammed a short distance below the springhead to create an artificial pond and the dramatic cover of red encrusted pebbles as described by Englefield can no longer be seen. However, downstream of this dam, pebbles occur in the stream bed which exactly fit his description. Such pebbles occur up to at least 400 metres downstream of the source. Below this point, water from an agricultural drainage ditch enters the stream which becomes somewhat deeper and more muddy.

The blood-red patches belong to *Hildenbrandia rivularis* (Liebm.) a red encrusting alga. This is a slow growing species which occurs frequently in the unpolluted upper reaches of streams and is probably frequent where such habitats still occur on the Island. It may, for instance, be seen in the chalk stream at Bonchurch. In well illuminated situations, the alga tends to be largely confined to the underside of stones and it is likely that its presence on the upper sides of the pebbles as noted by Englefield was a response to the shaded woodland location of the chalk stream. Associated with the alga on the pebbles is an uncommon crustose lichen, *Verrucaria kernstokii* (Zsch.). *Hildenbrandia rivularis* and aquatic *Verrucaria* species form a characteristic species-poor association which appears to be widespread in European rivers.

I am grateful to L. M. Irvine of the British Museum, Natural History, for confirming the identity of the alga and for information on the old latin names quoted by Englefield. I am grateful to B. J. Coppins of the Royal Botanic Garden, Edinburgh, for determining the lichen.

References

- BRADBURY, J. (1874). *The Isle of Wight: how to see it for six guineas*.
ENGLEFIELD, H. C. (1816). *A description of the Picturesque Beauties, Antiquities and Geological Phenomena of the Isle of Wight*. London.

BIRD COUNTS AT BEMBRIDGE 1972-77

By J. M. Cheverton

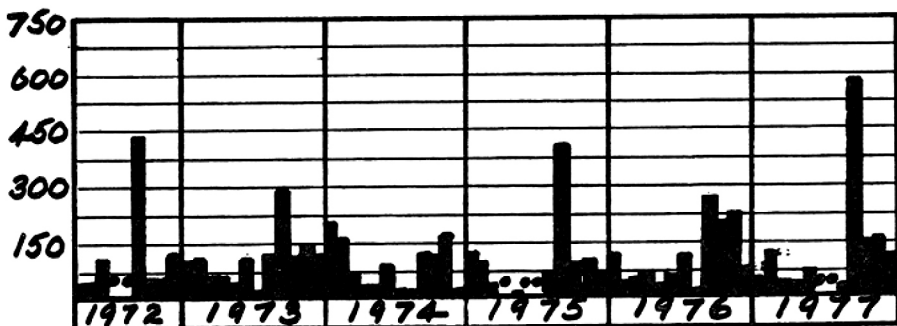
I—WILD FOWL

Since the report made in the Proceedings for 1971, monthly counts of ducks, geese and swans have continued at Bembridge. These counts, organised by the Wild Fowl Trust¹, have taken place from September to April and were supplemented in some summer months when visits to the area were made to collect information for the British Trust for Ornithology Nest Records Scheme².

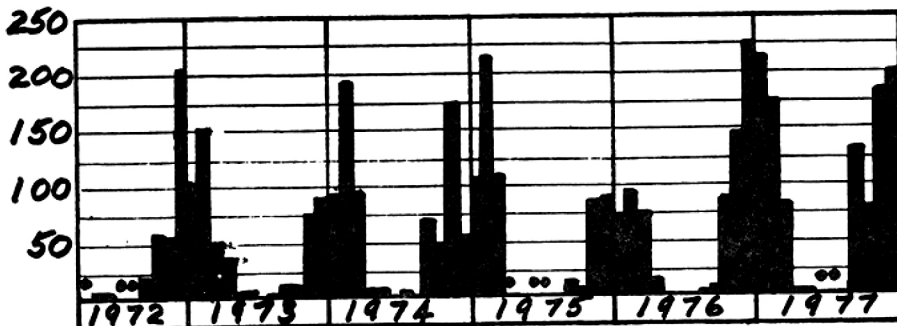
As before, the area was covered by walking from the Royal Spithead Hotel along the side of the eastern fresh water pond, through Home Farm (with the kind permission of Mr. R. Thornycroft), around the western pond, across the marshes to meet the Yar near Brading Cement Mill, returning along the river to the road bridge on the embankment near St. Helens; thence across St. Helens Mill Pond on the causeway to the Duver. The return to Bembridge was made around the perimeter of the harbour making a total distance of about 10 km.

MALLARD

● denotes no count

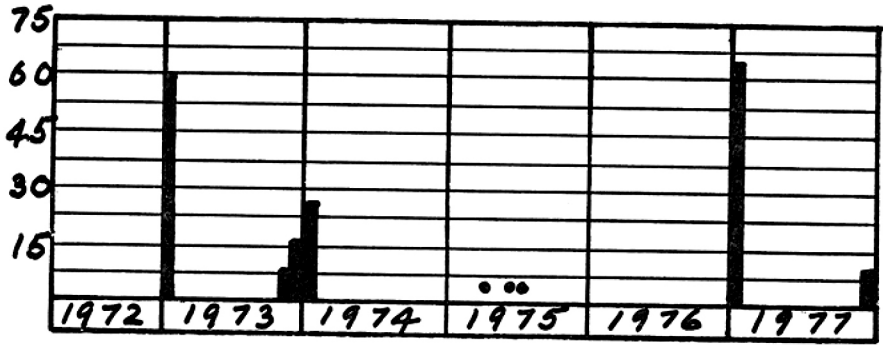


TEAL

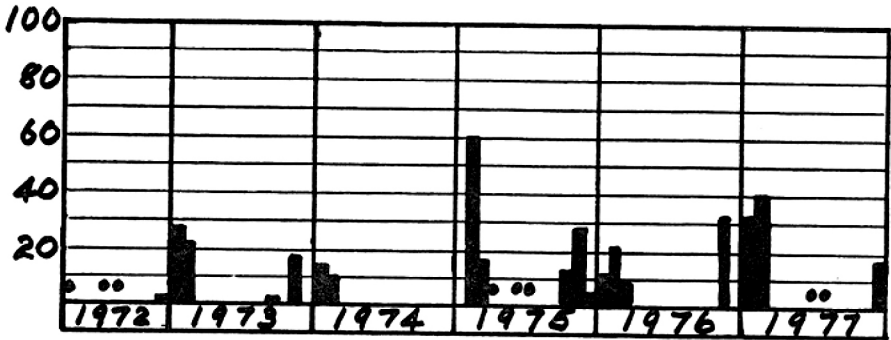


WIGEON

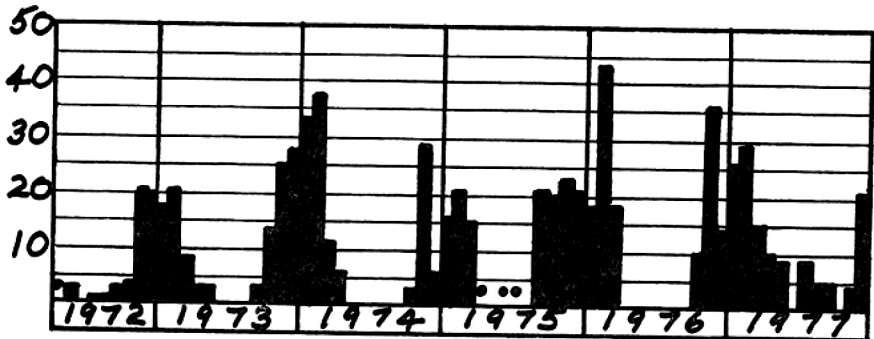
● denotes no count



SHOVELER

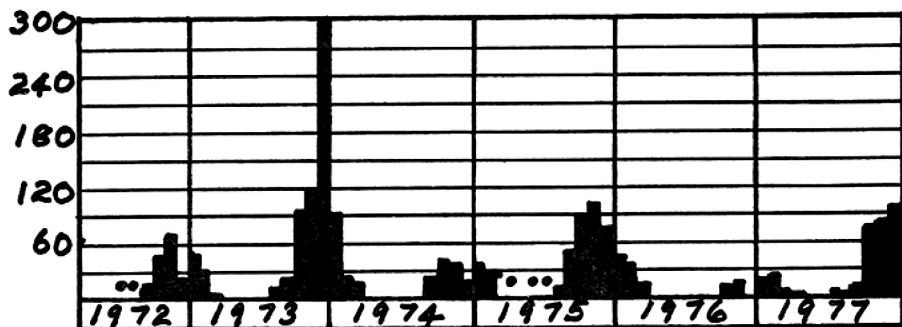


TUFTED DUCK

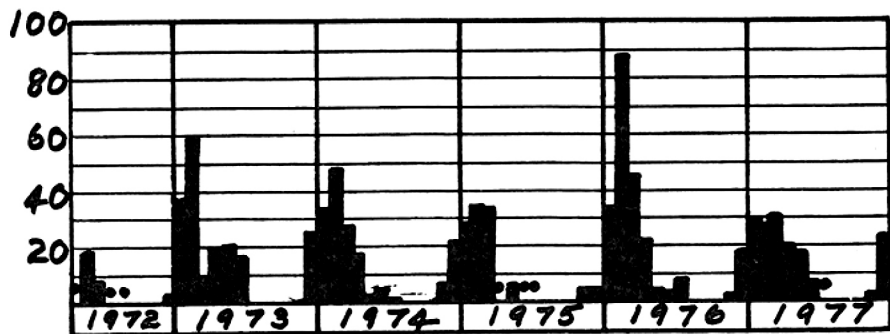


POCHARD

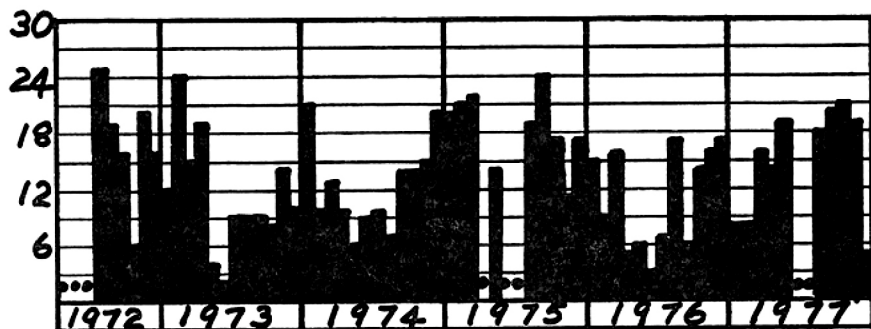
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SHELDUCK



MUTE SWAN



Mallard. The largest numbers were observed in August each year with the birds in eclipse. 1977 was the best year with a peak count of 577. The area most favoured by this species was the western fresh water pond at Home Farm but numbers often in excess of 500 were seen regularly throughout the winter on the sea at Whitecliff Bay, outside the census area. This species breeds regularly on the marshes.

Teal. Peak winter counts have increased slightly since the last report, the average being slightly in excess of 200. These ducks favour four areas with the largest number using a marshy open space to the south of the reed bed which borders the south side of the western fresh water pond at Home Farm. The other areas are the water meadow to the west of Bembridge Harbour, the tarn near the Yar road bridge, and the water meadow near Bexley Point (SZ 620.877). One pair bred successfully in 1972.

Wigeon. Still an uncommon duck at Bembridge, usually appearing near the western fresh water pond at Home Farm in January. None were seen between January 1974 and January 1977.

Shoveler. A regular winter visitor from November to March. Numbers have increased since the last report with a peak count of 60 in February 1975. No recent evidence of breeding.

Tufted Duck. Has increased slightly in number, the peak count being 43 in February 1976. One pair bred successfully in 1977 producing six young which were medium-sized when last seen. Confined to the fresh water ponds except in severe weather when the birds take to the harbour.

Pochard. Has increased in number since the last report, over 300 being present in December 1973. Has not been seen away from the fresh water ponds and has not been known to breed in the area.

Shelduck. Large numbers are not seen at Bembridge, the population remaining steady with from 50 to 80 birds in mid-winter, declining to a few breeding pairs in summer, with none from August to October when the birds depart to moult. A favourite spot for this species is the water meadow containing the old dynamite store (SZ 628.879).

Mute Swan. The decline in the winter population, noted in the last report, has ceased with numbers remaining at a lower level of from 14 to 24 birds. Breeding has not been too successful with perhaps three nests each year and the following numbers of young:

1972—11 1973—1 1974—7 1975—3 1976—5 1977—8

Less Frequent Visitors. The following species have been seen on a few occasions:

Garganey ♂—April 1977.

Gadwall 2♂, 3♀—December 1973.

Pintail ♂, 2♀—January 1974.

Scaup ♀—January 1973. ♂ ♀—December 1976. ♂—March 1977.

Eider ♀ present from January 1972 to April 1973.

Red breasted Merganser 4 - January 1974. 13 - February 1974. 2 - February 1975. 5 - December 1976. 12 - January 1977.

Smew 7 - February 1974.

Egyptian Goose 1 - November 1976.

Grey Lag Goose 1 - March 1976.

Brent Goose 1 - November 1972. 1 - February 1975. 1 - November 1976.

Canada Goose 1 - March 1974.

Bewick Swan 6 – November 1972.	3 – November 1973
3 – December 1973	2 + 2 juveniles – December 1974
2 – January 1975	2 – November 1975
5 + 2 juveniles – December 1975	
3 – January 1976	2 – February 1976
4 – November 1976	2 – November 1977

Coot. This area holds most of the coots resident in the Island. Counts were not made regularly but the following figures give some idea of the population at Bembridge:

242 – January 1973	223 – December 1973	300 – February 1976
113 – August 1973	324 – January 1974	303 – January 1977
263 – November 1973	301 – September 1975	254 – December 1977

II—GULLS AND WADERS

The monthly counts of estuary birds, started in 1969, have continued from July to April each year. The counts were undertaken for the Birds of Estuaries Enquiry organised jointly by the British Trust for Ornithology and the Royal Society for the Protection of Birds³. The route used and the method of counting remained the same as those reported in the *Proceedings* for 1971, i.e. a walk around the perimeter of the harbour from the Royal Spithead Hotel to St. Helens Duver, counting in the harbour and on the land immediately inside the embankment.

Great Black-backed Gull. Generally 2 to 5 present. The count in November 1975 was 95.

Lesser Black-backed Gull. Has increased since the last report although still infrequent, 8 being the largest number seen.

Common Gull. The build-up in the Autumn, reported previously, has been sustained. Peak counts have occurred in February with a maximum of 441 in 1976. Most birds leave in April to breed elsewhere.

Herring Gull. Common. Has decreased since the last report with average winter counts of 125 although February 1977 produced 600.

Black headed Gull. Still the commonest gull in the area. Appears to be increasing with average counts of 246 and a peak of 1667 in January 1973.

Oystercatcher. Present except in the breeding season. Numbers counted varied according to the state of the tide since the birds usually departed before high water. On occasions up to 68 have been seen parked on the ruined sea wall to the south of St. Helens Mill Pond, but usually in severe weather.

Lapwing. A common resident which breeds on the marshes. Winter flocks often number between 500 and 1000.

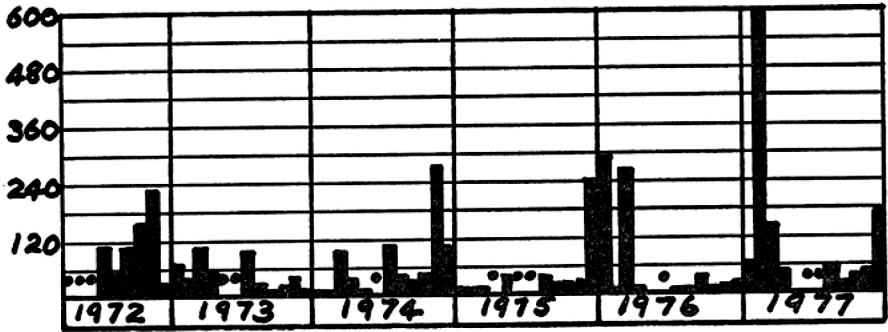
Ringed Plover. Winter counts increased steadily from 1972 to 1976 but have dropped again recently. Usually seen on the shore on the north side of the harbour entrance. In November 1976, 135 were recorded, the highest number since counts were started at Bembridge. Does not breed in the area.

Curlew. A small number present from August to April. The maximum number seen was 17 in January 1972 and November 1975.

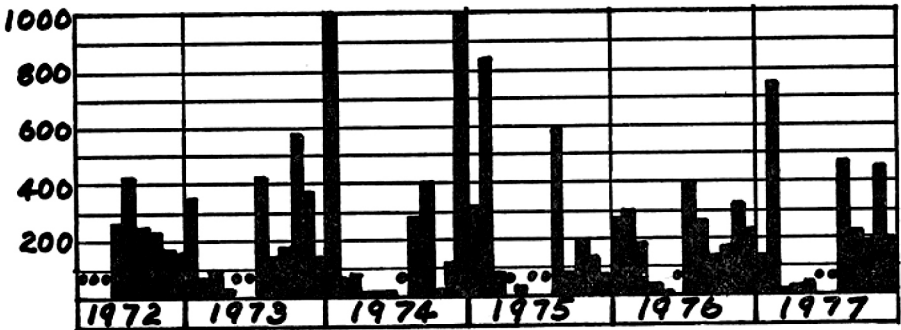
Redshank. The average monthly population was 49 with a peak of 131 in December 1974. At high tide large numbers were often seen parked on a wooden landing stage projecting from the north side of St. Helens Mill Pond. In August and September 1977 redshanks disappeared from the estuary. At first it was thought that the birds had moved inland to the marshes but searches there revealed none. The mystery remains unsolved.

HERRING GULL

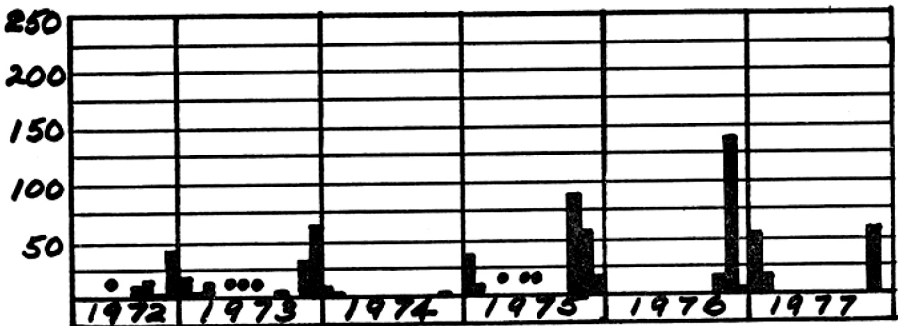
● denotes no count



BLACK HEADED GULL



RINGED PLOVER



Dunlin. A winter visitor from November to March with occasional singletons in September and October. The average winter number was 80 with 274 as the largest flock (in December 1976). Seen mainly on the mud around the harbour about two hours after high tide.

Sanderling. A winter visitor to the sandy beaches either side of the harbour mouth. Although not seen as frequently as in the past, the flocks have been larger. The 400 present in November 1976 was the largest number seen since the counts began.

Less Frequent Visitors

Grey Plover. A winter visitor occurring in small numbers (up to 9) each year until October 1975. None since.

Turnstone. An occasional winter visitor most years. Up to 9 seen at the east end of St. Helens Mill Pond at low tide.

Common Snipe. Although very common in Bembridge and Brading Marshes, is sometimes seen in small numbers in St. Helens Mill Pond at low tide, or, in the water meadows to the west of the harbour embankment road. 84 on the former site on 2nd February, 1975.

Jack Snipe. One, in the water meadow by the western pond at Home Farm, in December 1977.

Whimbrel. A passage migrant. 2 - St. Helens Mill Pond, 31st July, 1976. 2 - near eastern pond, 17th April, 1977.

Black tailed Godwit. 2 - on the marsh, 1st May, 1973. 1 - on the marsh 9th March, 1974.

Bar tailed Godwit. Up to 6 seen feeding in the sea off the Royal Spithead Hotel during the winter months, each year, at low tide only. 1 - in summer plumage, May 1972.

Green Sandpiper. 1 - September 1974. 1 - July 1976.

Wood Sandpiper. A passage migrant. 1 - east pond, August 1977. 1 - near east pond, September 1977.

Common Sandpiper. Passage migrant. Two or three seen by the east pond April, May and August to November each year.

Spotted Redshank. During 1977 one was seen each month from April to December. Before this period the species was seen in August 1973 only.

Greenshank. A recent addition to the estuarine population. Since August 1975 has been a regular winter visitor in increasing numbers. 6 - November 1977.

Knot. Only one seen - 29 December 1973.

References

- 1 G. L. Atkinson-Willes and C. J. Beale. "Wildfowl censuses and counts in Britain". *Wildfowl*, 19: 156-9.
- 2 Henry Mayer-Gross. Nest Record Scheme. *B.T.O. Field Guide* No. 12.
- 3 David Glue. "Birds of Estuaries Enquiry". *B.T.O. News* 34: 1-2.

EDITOR'S NOTE

The Bird Report for 1976/7 will be issued as a separate publication. The page numbers, however, will be consecutive, so that it may be bound in following this issue, of which it will form a part.

MIGRATIONS OF INSECTS IN 1977

By R. L. E. Ford

On the afternoon of May 28th members of the Geological Section lead by Dr. Insole, were on the beach at Whale Chine when many thousands of a small beetle were seen. The tide was out and when a wave came in over the sand and then receded, it left behind many small dots which then started to move about. They were all small beetles, about 4mm long with reddish legs and thorax and bright green elytra. These were kindly identified by Mr. R. D. Pope of the British Museum (Natural History) as *Gastrophysa polygona* (L.)* a species at present not thought to be a migrant.

However, with an onshore wind for three days it seems unlikely that these were carried out to sea and then back again. It seemed impossible to make a reliable estimate of numbers, but there must have been an enormous quantity in the sea. At some stage in their flight the wind must have dropped, allowing them to come down on the water.

Later in the year, in August the Island was flooded with hover flies and I have never seen anything like the enormous numbers. I don't know how many aphids go to feed one hover fly larva, probably nearer fifty than ten, so some country must have suffered to produce the hover fly invasion over here. There were three species of these flies, the largest being *Catabomba pyrastris* L., a species with cream lines on the abdomen which are not joined across. There were a number of *Syrphus ribesii* L., smaller and with yellow lines, the end three being joined across, while the vast swarms were *Syrphus balteatus* Deg., a species well known to occur in vast swarms and considered a migrant. It is much smaller than the other two.

On the first day of this invasion the sevenspot ladybird also arrived in great numbers, but moved on at once, while the hover flies stayed with us. A few Painted Lady and Red Admiral butterflies arrived at the same time and a few only of the Silver Y moth.

Further records of migrating insects were received from Mrs. Lorna Snow as follows: 30th July to 1st August—Passage of hover flies north along Upper Hyde Farm Lane, Shanklin, over a fairly wide front with many over a potato field. There seemed to be more than one species, as some are longer than others. Also some were seen at Brook and Sandown.

8th and 9th August—Passage of hover flies resumed after three days of rain and showers. On the first day many ladybirds were also involved.

12th August—Passage still continuing.

29th August—Passage of hover flies continues, whenever the sun shines. They were seen to be flying along a disused railway cutting from a westerly direction, and then changing to a north easterly direction through gaps in the shrubs.

14th September—A warm sunny day. Hover flies in small numbers were seen with ladybirds and grasshoppers. There was a large gathering of swallows and house martins.

The hover flies were seen generally from 6.30 a.m. until about 6.30 p.m. on all warm sunny days. The flight path was always from South or South-west to North-east. The hover flies were taken in the net from time to time and proved to be of three species. They were seen to settle on Lobelia (bright blue), African Marigold (yellow and brown), Runner Bean (dark red) and, in larger numbers, on Tagetes (bright yellow).

*Specimens preserved in the Sandown Collection.

HABITAT STUDIES No. 1 THE FLORA OF THE RIVER MEDINA

Compiled from the botanical records of R. Kettell, B. Shepard and the late J. Bevis

THE MEDINA

Apart from odd rarities estuarine vegetation varies but little in any part of Southern England, and for that reason the choice of the Medina for a detailed habitat study calls for an explanation. Consider the pressure from both industrial and recreational interests, assess the changes that have taken place in our navigable waterways during the past decade, and unquestionably no other aspect of our national heritage is under such pressure. Is it rash to say that the day will come that nowhere within our navigable estuaries will the water lap on a natural shore? Of the four estuaries suitable for a habitat study, Wootton, Medina, Newtown and Western Yar, our choice was made purely on the environmental pressures and not on vegetative preferences.

Should the more extreme proposals for the Medina reach fruition, such as a water park complete with barrage, turning it into a fresh water lake, this habitat study will still have its part to play. To the present generation of botanists, an introduction to a very interesting area, but to those following in our footsteps, a yardstick by which to measure the floral changes, whether it is salt or fresh water.

In producing the checklist the problem of pin-pointing species along some eight miles of shore had to be solved, and to overcome this, four areas representing the varying habitats of an estuary were chosen. Areas small enough to be thoroughly searched yet containing most, if not all, of the Medina maritime species. Whilst in the process of preparing the investigation, the old brickworks clay pit at Werrar became the dumping ground for sub-soil and other industrial site clearance material and destroyed our objective. No other similar habitat exists, and it is with regret that the vegetation of the area cannot be included in the following table, but the site description is included to describe our proposed objective.

Site 1. Map reference (502 938).

An area of salt marsh approximately one acre in size, lying immediately south of the old refuse tip and separated from that by a tidal gully. Despite its diminutive size it lacks none of the salt marsh components; drainage channels, quick draining ridges, natural salt pans, saline pools, and the usual peripheral vegetation.

Site 2. Map reference (501 936).

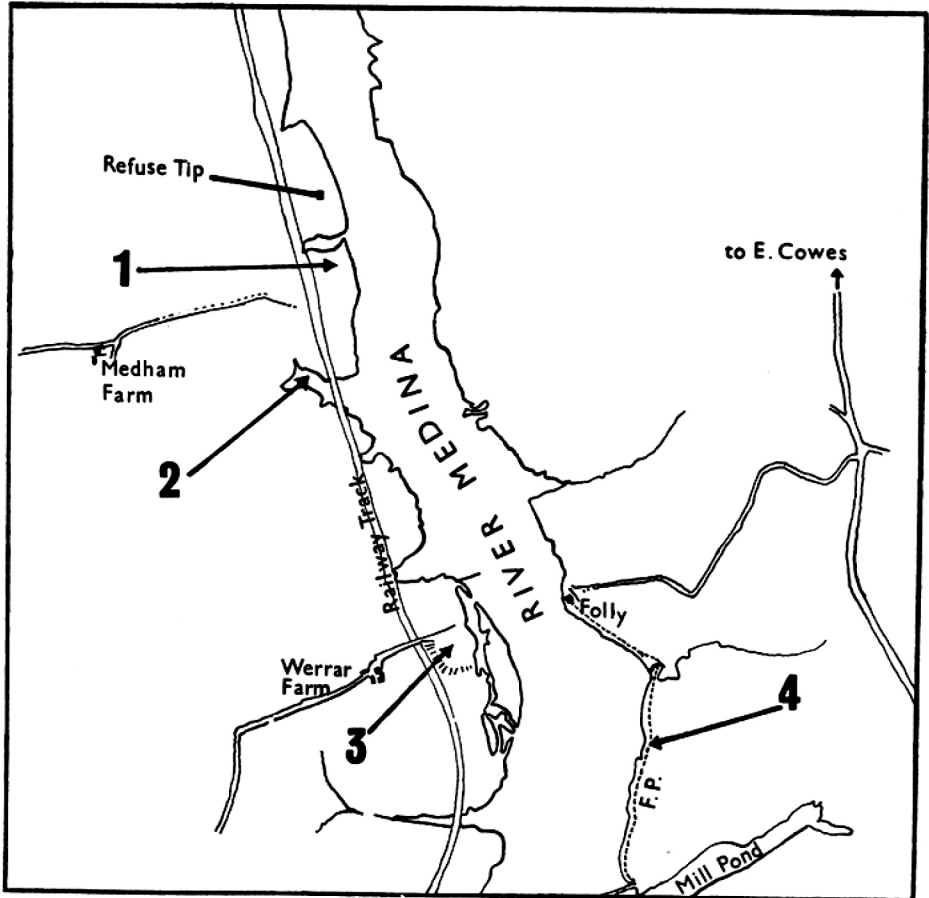
A tidal pool lying on the west side of the old rail track at Medham, with a flora ranging from vegetation inundated at every high tide to species too far from the water to be influenced by the salt, yet with a definite maritime distribution. Of this habitat, it can be safely said that it is the finest example of vegetative zonation in the Island, in fact, text book material.

Site 3. Map reference (504 928).

The clay pit at Werrar old brickworks. Mainly fresh water, a large pond in winter, evaporating to a small marsh in dry summer. Its water table synonymous with that of the river, and the occasional high water flooding, giving an interesting mixing of salt and fresh water vegetation.

Site 4. Map reference (510 920) to (509 929).

Strand and foreshore vegetation between the old East Medina Mill site and the Folly Inn. Along the almost entire length of this section the top of the beach passes smoothly into the surrounding meadows, and a perfect gradation of the flora ensues. The beach is shingly and in consequence the characteristic plants of a sandy strand line are absent. A public right of access exists along the entire habitat, a footpath carpeted with Hard-grass and bordered with Reflexed Saltmarsh-grass.



Sketch Map of the Medina Estuary showing Sites 1 to 4.

DISTRIBUTION OF THE SALTMARSH FLORA

- Column 1. The area of saltmarsh immediately south of Cowes refuse tip by the Medina (site 1).
2. The tidal pool on the west side of the old rail track at Medham (site 2).

3. The footpath along the shore between East Medina Mill site and the Folly
4. By the Medina if not listed in the three previous sites. [(site 4).
5. Thorness Bay.
6. Yarmouth.
7. St. Helens Duver (salt marsh).
8. Newtown.
9. Hamstead.
10. King's Quay.

To avoid any confusion over the English names we have quoted from a single source, "English Names of Wild Flowers" by Dony, Rob and Perring and quoted the number from Dandy's "List of British Vascular Plants", 1958.

Dandy No.	Species	1	2	3	4	5	6	7	8	9	10	
574.2	Arrowgrass, Sea	■	■	■		■	■		■		■	
519.1	Aster, Sea	■	■	■		■	■	■	■	■	■	
687.3	Barley, Sea	believed extinct.										
155.1	Beet, Sea	■		■								
655.9	Club-rush, Grey					■						
655.3	Club-rush, Sea	■	■	■		■	■		■		■	
716.	Cord-grass, Common	■		■		■	■	■	■	■	■	
716.1	Cord-grass, Small								■			
716.	Cord-grass, Townsend's	■	■	■		■	■	■	■	■	■	
685.4	Couch, Sea	■	■	■		■	■	■	■	■	■	
160.1	Glasswort, Perennial	■					■	■	■	■	■	
160.3	(<i>europaea</i>)	■	■	■		■	■	■	■	■	■	
160.4	(<i>ramosissima</i>)				■		■	■			■	
160.5	(<i>pusilla</i>)										■	
714.1	Hard-grass	■		■			■		■	■		
283.4	Hare's-ear, Slender	■	■			■					■	
165.1	Marsh-mallow	■				■			■	■	■	
156.1	Orache, Grass-leaved	■		■		■	■	■	■	■	■	
156.3	Orache, Spear-leaved	■	■	■		■	■	■	■	■	■	
472.4	Plantain, Sea	■	■	■			■		■	■	■	
605.5	Rush, Saltmarsh	■	■	■		■		■		■	■	
605.14	Rush, Sea	■	■	■		■	■		■		■	
512.5	Samphire, Golden	■							■	■		
673.1	Saltmarsh-grass, Common	■	■	■		■	■	■	■	■	■	
673.2	Saltmarsh-grass, Reflexed			■								
673.5	Saltmarsh-grass, Stiff			■								
139.1	Sandwort, Sea			■						■	■	
88.5	Scurvygrass, Danish	■	■	■					■			
88.6	Scurvygrass, English		■	■			■		■			
158.1	Seablite, Annual	■	■	■			■	■	■	■	■	
121.1	Sea-heath					■				■	■	
365.1	Sea-lavender, Common	■	■	■			■		■	■	■	
365.2	Sea-lavender, Lax-flowered		■						■		■	
373.1	Sea-milkwort	■	■	■		■	■	■	■		■	
143.4	Sea-spurrey, Greater	■		■		■	■	■	■	■	■	

Dandy No.	Species	1	2	3	4	5	6	7	8	9	10
143.5	Sea-spurrey, Lesser	■	■	■			■	■	■	■	■
663.2	Sedge, Distant	■	■			■		■	■	■	■
663.62	Sedge, Divided	■		■		■			■	■	
663.11	Sedge, Long-bracted	■	■			■			■		■
579.2	Tasselweed, Beaked	■					■				
366.1	Thrift	■	■	■		■		■	■	■	■
535.7	Wormwood, Sea		■					■	■		

RIVER MEDINA—Source to Newport

The fresh water section of the Medina and its tributaries provide excellent botanising and we recommend the following six stations:—

Source near Chale with another branch arising just north of the Hermitage, less than half a mile from where a branch of the Eastern Yar rises. From the two sources to a point just south of the Wilderness the river is bordered by a narrow strip of marshland. Access from Beckfield Cross (482 810) on public right of way, but permission to wander should be sought. The plants of this section are listed in the following table under column "A".

Wilderness. A boggy piece of woodland surrounded by marshy meadows. The soil is peaty from just south of the Wilderness to a point north of Rookley Farm. The bog flora has now disappeared, except for a few shrubby species such as *Myrica gale*, and replaced by a very coarse marsh vegetation. The present vegetation is listed under Column "B". Access to the Wilderness may be obtained from Bleak Down at (511 827) or from Cridmore Farm (498 825) Permission to wander should be sought.

Rookley Moor. There are many references to the flora of this area, records suggesting that it was an acidic extension of the Wilderness. It is now under cultivation and only a very narrow strip of marsh remains except just south of Highwood Lane where the calcareous waters of the Chillerton valley join the main stream. The plants are listed in column "C".

Gatcombe to Blackwater. In this section the river runs through a long stretch of neglected woodland. Plants listed under column "D". At Blackwater the river is joined by another tributary which can be followed by walking the old rail track between Blackwater and Merstone, passing through some excellent marshy areas, both copse and meadow.

Blackwater to Newport. The old rail track borders this section of the river and provides one of the best botanical walks. Natural for much of the distance between Blackwater and Shide, with trees, thickets and marshy ground all around, yet good dry walking for the less venturesome. From Shide into Newport, the river has been changed from the natural to a man-made waterside amenity, and excepting the excessive use of concrete in some sections, it is still good botanical hunting ground. Trees, marsh plants and aquatics. Listed under column "E".

Lukely Brook. Is the largest of the Medina tributaries, carrying the drainage waters of the Bowcombe valley some three miles. Only in the first mile of its course from the springs at Raynors Grove near Bowcombe Farm is the vegetation worthy of inspection, but during its pathetic down-graded run through Newport it shows its potential as an amenity with the magnificent willows in Recreation Ground Road. The Lukely plants are listed in column "F".

Dandy No.	Species	A	B	C	D	E	F
336.1	Alder					■	
307.1	Angelica		■	■		■	
485.8	Bedstraw Marsh, Common	■	■				■
193.3	Bird's-foot-trefoil, Greater		■				■
97.4	Bitter-cress, Wavy				■		
430.1	Brooklime	■	■	■		■	
21.5	Buckler-fern, Narrow		■				
502.2	Bur-marigold, Trifid		■	■		■	
652.1	Bur-need, Branched		■	■		■	
713.1	Canary-grass, Reed					■	■
132.1	Chickweed, Water		■			■	
212.2	Cinquefoil, Marsh	■	■				
392.1	Comfrey, Common	■				■	
46.16	Crowfoot, Ivy-leaved			■			
46.17	Crowfoot, Round-leaved		■				
97.1	Cuckooflower	■	■	■	■	■	■
515.4	Cudweed, Marsh		■		■		
650.3	Duckweed, Common					■	
13.1	Fern, Hard		■				
424.2	Figwort, Water		■			■	■
513.1	Fleabane, Common	■	■	■	■	■	■
400.4	Forget-me-not, Tufted	■	■	■			
400.1	Forget-me-not, Water		■	■	■		
429.1	Foxglove	■	■				
708.3	Foxtail, Marsh		■	■			
242.1	Golden-saxifrage, Opp-leaved				■		
446.1	Gypsywort						■
4.6	Horsetail, Marsh		■				■
4.5	Horsetail, Water	■	■		■		
616.4	Iris, Yellow	■	■	■	■	■	■
18.1	Lady-fern		■			■	
370.3	Loosestrife, Yellow		■				
163.1	Mallow, Musk		■	■		■	
36.1	Marsh-marigold				■	■	■
643.4	Marsh-orchid, Southern		■		■	■	■
210.2	Meadowsweet	■	■		■	■	■
445.4	Mint, Water	■	■	■	■	■	■
667.1	Moor-grass, Purple		■				
333.1	Myrtle, Bog		■				
269.1	Pennywort, Marsh	■	■				
663.20	Pond-sedge, Greater						■
663.21	Pond-sedge, Lesser				■		
577.2	Pondweed, Bog	■	■				
577.19	Pondweed, Curled					■	
580.1	Pondweed, Horned						■
578.1	Pondweed, Opposite-leaved						■
249.1	Purple-loosestrife		■			■	

Dandy No.	Species	A	B	C	D	E	F
124.3	Ragged-Robin		■			■	■
506.2	Ragwort, Marsh	■	■				■
665.1	Reed, Common		■		■		■
605.8	Rush, Hard	■	■			■	
605.19	Rush, jointed	■	■				■
605.18	Rush, Sharp-flowered	■	■				
605.9	Rush, Soft	■	■			■	
605.7	Rush, Toad			■	■		
115.8	St. John's-wort, Square-stalked		■			■	
663.16	Sedge, Bottle	■	■				
663.50	Sedge, Common	■	■				
663.32	Sedge, Hairy	■		■			
663.74	Sedge, Oval	■	■				
663.22	Sedge, Pendulous				■	■	
212.5	Silverweed		■			■	■
469.1	Skullcap		■		■		■
469.2	Skullcap, Lesser	■	■				
325.2	Sorrell, Common	■	■	■	■	■	■
46.12	Spearwort, Lesser	■	■				
643.2	Spotted-orchid, Heath		■				
133.8	Stitchwort, Bog	■	■	■	■	■	■
133.7	Stitchwort, Lesser	■	■	■	■	■	■
669.1	Sweet-grass, Floating	■	■	■		■	
669.2	Sweet-grass, Plicate					■	■
669.4	Sweet-grass, Reed					■	■
669.3	Sweet-grass, Small		■				
540.3	Thistle, Marsh	■	■	■	■	■	■
*663.54	Tussock-sedge, Greater	■	■		■		
495.1	Valerian, Common		■		■		■
102.1	Water-cress	■		■		■	■
285.2	Water-cress, Fool's	■	■			■	■
300.2	Water-dropwort, Corky-fruited		■				
3005.5	Water-dropwort, Hemlock	■	■	■	■	■	■
563.1	Water-plantain		■			■	
320.12	Water-pepper			■			
2501.	Water-purslane		■				
262.1	Water-starwort, Common	■	■	■		■	
262.2	Water-starwort, Various-leaved					■	
343.4	Willow, Crack		■			■	■
343.12	Willow, Grey		■			■	■
343.2	Willow, White						■
254.1	Willowherb, Great	■	■	■	■	■	■
254.10	Willowherb, Marsh		■				
254.9	Willowherb, Short-fruited		■				
459.6	Woundwort, Marsh		■			■	■

REDISCOVERY OF RARE MOSS

Philonotis marchica (Hedw.) Brid. at Shanklin, Isle of Wight

By Lorna Snow

On 1st January, 1978, while collecting specimens of moss from the revetment at Shanklin, I found a small specimen growing on wet detritus at the foot of the cliff which I could not identify. On the advice of Dr. E. V. Watson of Reading University I sent a sample to Mr. J. H. Field of Solihull, who identified it as *Philonotis marchica* (Hedw.) Brid., giving as his reasons:—

The brown stem, carinate leaf nerves, leaves with a curved outline, and cells with distal mamillae.

Also identified were several specimens of the larger-celled *laxa* variety.

The official description from the "Moss Flora of Britain and Ireland" by A. J. E. Smith (1978) is:—

P. marchica (Hedw.) Brid., Br. Univ. 1827.

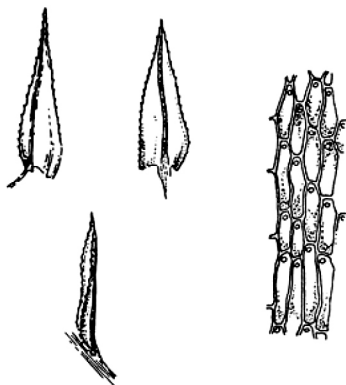
Plants slender or robust, 1-5 (-9) cm. Lvs erecto-patent in slender plants to falcato-secund in robust plants, narrowly lanceolate to ovate-lanceolate, acute to acuminate, not plicate near base, margin plane, toothed, teeth single, blunt or sharp; nerve ending below apex to shortly excurrent; basal cells rectangular, 8-16 μ wide, above narrowly rectangular, 6-10 μ wide in mid-lf, most cells except at extreme base with distal mamillae. Perigonal lvs \pm erect, apex long, acuminate. Capsule as in *P. fontana* but smaller. Fr. very rare, unknown in Britain. Pale green tufts on damp soil and in rock crevices, very rare. I. of Wight, N.W. Yorks.

(Reproduced by kind permission of the publishers, Cambridge University Press).

The records of this species for the British Isles are:—

Shanklin Chine, I.W. 1869, by W. Wilson – specimen now in Warrington Museum.
Deepdale, Bowes, Yorkshire, 4 August, 1903, by W. Ingham.

Philonotis marchica (Hedw.) Brid.
Detail of leaves (X20) and cells
(X200).
(Drawn by Mrs. A. Padfield)



There is no other record of a modern find of this species in Britain, a possible sample from Teesdale having been confirmed by Mr. Field as *P. capillaris*. The distribution outside Britain is continental Europe, W. Asia, Japan, Korea, North America, Algeria, Madeira.

Shanklin Chine was first commercialised in 1817, and so has been liable to man-made changes, in realignment of paths, etc., which may materially alter the habitat. In 1964 a field excursion of the British Bryological Society found a considerable quantity of *P. rigida* in the Chine, but no *P. marchica*. In 1978 no *Philonotis* of any kind was found in the Chine, and it is hoped to carry out further searches in 1979. The fact that the site where the *P. marchica* is growing strongly has only been constructed within the last 10 years poses some questions regarding the colonisation of the site. Fruiting plants have not been recorded in Britain, but the Shanklin plants were producing prolific axillary bulbils.

My thanks are due to Mr. Field for his help in identifying this material, and also to Mrs. A. Padfield for preparing the drawings.

Bibliography

- FIELD, J. H. Notes on the Taxonomy of the Genus *Philonotis* by means of Vegetative Characters. *Trans. Br. Bryol. Soc.* 1963 Vol. 4. Pt. 3 pp.429-433.
- FIELD, J. H. A British Record of *Philonotis marchica* Brid. *Proc. Birmingham Nat. Hist. Soc.* 1969 Vol. 21 No. 3 p.198.
- FIELD, J. H. A Key for the Recognition of the *Laxa* Varieties of the *Philonotis* species. *Proc. Birmingham Nat. Hist. Soc.* 1974 Vol. 22 No. 4 p.248.
- FIELD, J. H. Emended Diagnoses of *Philonotis marchica* (Hedw.) Brid. and *Philonotis Capillaris* Lindb. *Proc. Birmingham Nat. Hist. Soc.* 1976 Vol. 23 No. 2 pp.104-108.
- SMITH, A. J. E. *Philonotis marchica* (Hedw.) Brid. in Britain. *J. Bryol.* 1974 Vol. 8 p.5-8.
- SMITH, A. J. E. *The Moss Flora of Britain & Ireland*, 1978. Cambridge University Press.

sketch were very kindly given to me by M. Gaudant, who will be publishing a paper at a later date. Details of this with a synopsis will, I hope, appear in a Society Bulletin later on.

The size of both these genera of fish is only about four to five cms. long. It is possible that amongst those found in the past will be some of this new Genus.

METEOROLOGICAL REPORT FOR 1977

By E. J. Findon

This summary was compiled by Mr. E. J. Findon, Meteorological Officer for Shanklin.

The Maximum, Minimum, Wet and Dry Bulb Thermometers and the Rain Gauge are situated in Big Meade, Church Road, Shanklin, and are 180 ft. above sea level. The Sunshine Recorder and the Weather Vane are on the roof of the Town Hall. All the instruments in use have been supplied by the Meteorological Office and are tested periodically.

Readings are taken at 0900 hours and at 1800 hours daily, G.M.T.

It is regretted that, owing to my not taking over until June and having no prior knowledge of the details required for this report, I am unable to produce such a full summary as did Mr. Hoare.

WEATHER SUMMARY CHART FOR 1977

	Sun Hours	Rain mm.	Screen Temperatures		Extremes °C		Mean Temp. °C	Snow Records	Thunder Records
			Max. Mean °C	Min. Mean °C	From	To			
January	73.6	110.8							
February	82.5	134.3							
March	120.7	79.0							
April	206.4	32.1							
May	260.4	58.0							
June	161.3	49.4	14.9	9.5	20.5	12.4			
July	243.3	18.8	18.7	12.6	25.2	8.5			
August	208.3	70.3	18.7	11.9	24.0	8.9			
September	149.7	53.8	15.4	10.7	19.2	6.5			
October	133.6	56.5	15.3	10.3	17.1	6.1			
November	106.7	110.1	9.9	5.3	16.0	-1.0			
December	56.6	125.4	9.4	5.6	13.4	0.1			
Totals	1803.1	898.5 or 35.75 ins.							

NATURAL HISTORY AND ARCHAEOLOGICAL NOTES FOR 1977

Dinosaur footprints at Chilton, I.W.—A large footprint of a dinosaur was discovered on the shore between Brighstone and Brook at an exceptionally low tide by Mr. William T. Blows, of London, a leading amateur dinosaur expert. With Mr. R. L. E. Ford and Dr. A. Insole, a further 30 other dinosaur footprints were found of different sizes and set in eight tracks, crossing the area in different directions.

I.W. COUNTY PRESS 19/3/77

Report of Purple Emperor near Newport. Mr. Andy Keay, Warden of the Hampshire & Isle of Wight Naturalists' Trust Reserve at Stag Copse, near Newport, reports that he and two young people watched a specimen of the Purple Emperor, *Apatura iris* (L.), sunning itself on a bramble leaf in the copse at 0840 hrs. BST on 16th July, 1977. Mr. Keay made four further visits in the ensuing week, but without success. Since this species has been extending its range on the mainland for several years, the possibility that it may breed on the Island becomes ever more likely, even if it has not done so hitherto.

D. W. H. FENNELL, Winchester

Tortoises bred at Newport—Miss Jacqui Wills, 17, of Mount Pleasant Road, Newport, successfully bred and reared young tortoises from eggs laid by a pair of tortoises in her garden, for the second year running.

I.W. COUNTY PRESS 17/9/77

Dormouse at Shorwell—Further to my report last year of a dormouse seen on the Green at Shorwell, my older son climbed a tree to take down a nesting box nailed to the trunk of the tree about fifteen feet above the ground. He was surprised when a dormouse emerged from the box and ran up the tree. He left the box in situ.

DAVID HIDE 4/10/77

Fungi at Brighstone—In December there was a fantastic display of clusters of bright golden fungi, *Flammulina velutipes*, on sawn logs of dead elms at Mottistone Mill, Brighstone.

O. H. FRAZER

